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THE Blue Jay

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Vol. XX No 4 SASKATOON, SASK. December, 1962

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LESSER YELLOWLEGS Photo by F. W. Lahrman

Published quarterly by
THE SASKATCHEWAN NATURAL HISTORY SOCIETY
REGINA, SASK.

BLUE JAY CHATTER

A great many letters have been received in answer to the Editor's request in the last **Blue Jay** chatter that members take a greater interest in the activities of the Society. Not all of these letters can be acknowledged in the letter section, but I would like to thank all those kind people who took time from their busy lives to write words of encouragement and appreciation. Suggestions regarding the **Blue Jay** or the operation of the Society will be passed on to the executive for consideration.

The **Blue Jay** continues to receive the highest praise, and each year in his report the Editor explains that this is largely due to the many members who offer worthwhile and thought-provoking articles for printing in our pages. In addition to those who help by their contributions, every member who belongs to the Society and pays his $2.00 dues helps to make a good magazine. Examination of our financial statement shows that nearly all of our money comes from memberships and that this money is all spent on printing the **Blue Jay.**

This year the good work which the **Blue Jay** is doing in conservation education was recognized when one of the awards of the American Association for Conservation Education was presented to the Editor by Mr. Doug Wade, Director of Conservation Information Service, Saskatchewan Department of Natural Resources. On behalf of the many people who help to make the **Blue Jay** possible, and on behalf of the Society which was formed 14 years ago to publish the **Blue Jay** and to encourage more people to take a greater interest in natural history, I am very happy to accept this award.

A second award was given by the Association to one of our faithful and well-known members, Doug Gilroy. This award recognizes the excellent work which he is doing by writing a weekly wildlife column in the pages of the **Western Producer.** Since Doug Gilroy is so well known to readers of the **Blue Jay** I need not explain how justly deserved this award of merit is.

The Society's most significant achievement of the past year was the publication of the **Blue Jay Index** (index to volumes 1-18, 1942-1960). We are very grateful to Mrs. Joyce Deutscher, editor of our Junior Naturalist section, for the countless hours which she spent combing back copies of the **Blue Jay** and arranging the items in index form. We are also deeply indebted to the Saskatchewan Museum of Natural History for the many ways in which they encouraged the project.

When I read the galley proof for the **Index,** before the 36-page (double-column) booklet was finally printed, I realized as never before what a wonderful contribution the **Blue Jay** is making. Each year many valuable items are recorded. The amateur naturalists of Saskatchewan have produced a journal which is accepted by people of professional competence, including scientists from the staffs of universities and government wildlife departments, who both contribute to it and use its records.

The **Index** is so much more than an index; it is a kind of history of the Society and of the things that naturalists in Saskatchewan have learned to appreciate in the past 18 years. It is a fascinating record of things that 20 years ago we did not know existed in the province—new animals, birds and plants that every year someone observes and reports in the **Blue Jay.** It is certainly worth the $2.00, even if you do not have all the back copies of the **Blue Jay.** Since we have printed a limited number, you should send for your copy now to the **Blue Jay,** Box 1121, Regina.

MERRY CHRISTMAS

George F. Ledingham.

The Blue Jay

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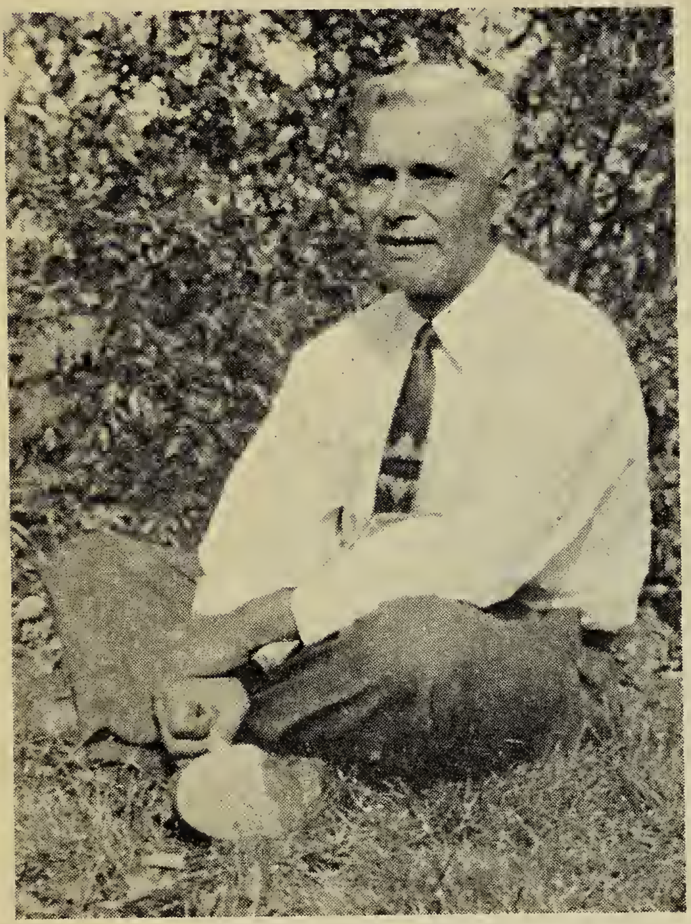
President's Page

by **Steve Mann**, Skull Creek



As your new President I would first like to thank the nominating committee for their confidence in me. I feel that they have more in me than I have in myself, but I will certainly endeavour to further all interests of the Society pertaining to natural history and the conservation of our natural resources. Distance may make it difficult for me to attend all of our meetings, but our first vice-president, Mr. Doug Wade, has very kindly offered to substitute for me in my absence.

I am sure that all members will be pleased to learn that Dr. George Ledingham has been persuaded to take on again the duties of editor. It is a job that requires a great deal of labour behind the scenes, and I would urge all members who have any information of interest, in the line of nature material, to send it to him so that he in turn can pass it on to readers of the **Blue Jay.** Also if you have any suggestions for the executive to work on, it would be greatly appreciated if you would send them either to myself or other officers of the Society.

I suppose as your President I should give you an outline of my connections with the Saskatchewan Natural History Society. I have been a member of the Society since its inception and before that I was a member of the Yorkton Natural History Society. The latter, as a great many of you know, was formed by a group of very enthusiastic naturalists headed by Mrs. Isabel Priestly. After her death the publishing of the Society's magazine, the **Blue Jay,** was taken over by the Saskatchewan Natural History Society.

The **Blue Jay** was started because Mrs. Priestly and her small group felt the need to pass on, and exchange, information on birds, and later, all natural history subjects. This great need is still present, which is the reason I have kept up my membership and have tried to pass on at least some of my observations to others.

Before the Yorkton Natural History Society started I used to correspond with several people, including the late Laurence B. Potter of East End, Saskatchewan, who were interested in nature, especially ornithology. We tried to get together for a "birding" trip once each year. We lived over 30 miles apart, and in those days it meant a trip by either saddle horse or horse and buggy, but the pleasure we obtained by sharing each other's notes and observations was always worth the effort. That is why I always urge any of our members to attend any meetings they possibly can, not only of the Saskatchewan Natural History Society, but of their local societies. It is the help we receive from others at these meetings that keeps our interest in nature alert, and keeps us "on our toes" so to speak.

In concluding, it is my sincere wish that our Society may continue to expand and accomplish many worthwhile projects. With the encroachment of civilization on many natural sanctuaries, and the use of chemicals which upset the balance of nature, naturalists, as never before, should be alert to all the needs of conservation.

Silent Spring

a review by **Roy Edwards,** Department of Biology,
University of Saskatchewan, Saskatoon

SILENT SPRING. By Rachel Carson. 1962. Houghton Mifflin Company, Boston. Price $5.95.

This book is a bitter denunciation of the indiscriminate use of chemical pesticides. It does not pretend to be a balanced account of the advantages and disadvantages of chemical control methods but is more in the nature of a case for the prosecution. In spite of this, the author takes care to point out that she is not opposed to the use of pesticides in certain cases. She states her position very clearly on pages 12 and 13. "It is not my contention that chemical insecticides must never be used. I do contend that we have put poisonous and biologically potent chemicals indiscriminately into the hands of persons largely or wholly ignorant of their potentials for harm. We have subjected enormous numbers of people to contact with these poisons, without their consent and often without their knowledge . . . I contend, furthermore, that we have allowed these chemicals to be used with little or no advance investigation of their effect on soil, water, wildlife, and man himself." In two separate places in her book she advocates the use of chemicals for the control of two specific pests—fire ants and woody brush—but in each case she advocates that the chemical be used in small quantities and in a special way.

The book is written in the typical Rachel Carson style—a style that has won her many literary awards but one that is hardly suitable for an attack on a multi-billion dollar industry. It contains a number of emotional outbursts and some frankly misleading statements. For example, in chapter 3 she cites a number of instances where accidental contact with a pesticide was followed within a few hours by the death of the person concerned. The implication is that the chemical caused the death, but only in one instance does she come right out and say so. The danger of jumping to the obvious conclusion in the other cases was shown recently in two separate press reports of farmers who spilled insecticides on themselves and died shortly afterwards. In both cases an autopsy showed that death was caused by a heart attack that was unconnected with the chemical effects of the poison. In Chapters 12 through 14 she tries to link the use of insecticides with the incidence of a number of human ailments including cancer, despite the fact that no positive proof exists.

That she allows her personal feelings to intrude so extensively into her book is a pity, because she can make her case perfectly well without them. Her case rests partly on the basis of information acquired incidentally during her sixteen years as a biologist in the U.S. Fish and Wildlife Service, but mainly on the results of four years work spent collecting data from all over the world on the effects of pesticides now in general use. She supports her argument with 55 pages of references to scientific papers, books and government reports.

In spite of her emotional outbursts, therefore, her book is not pure sensationalism. If, in parts, it reads something like a horror comic this is because the subject with which it deals is not a pretty one. Nor should the book be considered in the realm

and no birds sing

of science fiction; it refers to events that have already happened and her only projection into the future is in the extent to which these events—somewhat isolated at present—are likely to become more widespread as the scope of chemical pesticide campaigns increases.

In the first chapter the author paints an idyllic word picture of an imaginary American town situated in a corner of the land where farms prosper, streams contain abundant fish and the bird life attracts people from miles around. Then slowly a "strange blight" creeps over the area so that everything begins to change. The vegetation withers, cattle and fish die, families become ill and the birds disappear. In the spring, instead of the usual dawn chorus, there is silence. It is this phenomenon—the silent spring—that gives the book its name. This change in the countryside is not brought about by enemy action but by the people themselves through the indiscriminate use of chemical pesticides.

Although Rachel Carson emphasizes that the town she describes does not exist, nor has any single community ever suffered all the misfortunes she describes, "yet every one of these disasters has actually happened somewhere and many real communities have already suffered a substantial number of them." The remaining chapters of the book deal in greater detail with the various aspects of this "strange blight." The facts that she has to report make spine-tingling reading.

In Chapter 2 she points out that very few species of plants and animals are really serious pests and that man himself is largely responsible for those that are. The transportation of plants and animals from one continent to another where they are free from their natural enemies allows them to multiply unchecked. In addition to this the intensification of agriculture which concentrates a pest's most suitable habitat sets the stage for an explosive increase in its numbers. The attempts to control these pests with the aid of chemicals has led to a tremendous increase in the numbers of pesticides developed in recent years. Since the mid-1940's some 200 basic chemicals have been created for use against pests of one sort or another. Where these are sprayed indiscriminately over the countryside "good" organisms are killed as well as "bad."

In Chapter 3 the chemistry of a number of poisonous chemicals used in pest control is described briefly together with the way in which they affect living organisms. She points out that the quantities that are left as a deposit on plants or are found in the tissues of animals are expressed in terms of parts per million (ppm) and although these quantities may be exceedingly small they may have a very marked effect on a living animal. In experimental animals 3 ppm of D.D.T. have been found to affect an enzyme present in heart muscle and 5 ppm have brought about disintegration of the liver cells.

Rachel Carson draws attention to the existence of food chains in the animal world—how animals that feed on plants are themselves eaten by other animals which in turn may be eaten by still larger ones. She brings out the point that in this way poisonous chemicals deposited on the initial plant food are passed from one animal to another in the food chain and—most important of all—that when these substances are persistent poisons such as D.D.T. and its related compounds, the concentration increases at each level. For example, when alfalfa is dusted with D.D.T. the hay may contain 7 or 8 parts per million as a residue. But when this hay is fed to cows it may appear in the butter fat at 65 parts per million.

The way these quantities can build up in long food chains is quite dramatic. In an attempt to control gnats at Clear Lake, California, the water was treated with D.D.D. Three applications were made over a period of eight years and the dosage rate was one fiftieth of a part per million. Although no trace of the chemical could be found in the water "shortly after" the last application, it still persisted at the rate of 5.3 ppm in the microscopic organisms of the lake some two years later. After 12 months, all fish, frogs and birds that were examined showed the presence of D.D.D. in their tissues; gulls, which had fed on the fish, contained as much as 2,000 ppm. Meanwhile the population of western grebes on the lake has dropped from 1000 pairs in 1948 to 30 pairs in 1960. Moreover no young grebes have been found on the lakes since the last application of D.D.D. in 1957.

This absence of offspring is a typical effect of sub-lethal doses of insecticides. Birds that have been exposed to insecticides but have not received a fatal dose have shown greatly reduced fertility and in several cases complete sterility. One of the most dramatic cases occurred on the campus of Michigan State University. In a normal year there would be some 370 adult robins on the 185-acre campus and in late spring about the same number of young birds. In 1954, in an attempt to control the insect responsible for the spread of Dutch elm disease, the campus was sprayed wtih D.D.T. The insecticide was deposited on the elm leaves, carried into the soil in the fall where it was stored in the bodies of earthworms that eat the leaves. In the spring the earthworms were eaten by the robins which in many cases died as a result but in other cases became sterile. Analyses showed that ten males had amounts of D.D.T. ranging from 30 to 109 ppm in the testes while two females had 151 and 211 ppm in the ovaries. The effect of this on the robin population was obvious; in 1957 only one young robin was found and in 1958 not a single fledgling was seen anywhere on the campus.

The persistence of poisonous chemicals in the soil is dealt with at some length. Aldrin has been recovered from soil after 4 years, toxaphene after 10 years, benzene hexachloride after 11 years, heptachlor after 9 years, and chlordane after 12 years at 15% of the original quantity. The combined effect of persistence and repeated treatment give incredibly high concentrations in certain circumstances. Corn soils have been found to contain 19 lbs. of D.D.T. per acre, a cranberry bog had 34.5 lbs. per acre, and under trees in an apple orchard the concentration reached 113 lbs. per acre.

These high concentrations of chemicals in the soil can affect crops for years after treatment has ceased. The amount of arsenic present in cigarettes made from American tobaccos increased 300% between 1932 and 1952 and later studies (date not given) shows a continued increase to 600%. This has occurred in spite of the fact that arsenic poisons were largely replaced by organic insecticides in the mid-1940's.

In some sensitive plants—such as beans, wheat, barley and rye—root development is retarded by insecticides. Hop growers in Washington and Idaho treated their vines with heptachlor to control root weevil. Within a year the vines had withered and died. Although the fields were replanted the new plants also died. The U.S. Department of Agriculture which had declared heptachlor acceptable for use on hop vines hurriedly withdrew its registration of the chemical for such use. However, they could offer no solution to the problem of how to overcome the contamination of the soil nor (after four years) could they give any indication of how many more years the soil would remain poisonous.

The extent to which we are exposed to insecticides in our daily lives is quite surprising. Insecticides are used to moth-proof clothes; kitchen shelf paper may be impregnated with insecticides to kill flies; floor polishes and waxes may contain insecticides; gardens and lawns can be treated by insecticides in jars attached to the garden hose, and so on. Especially is our food supply liable to be contaminated. When the United States Public Health Service tested meals served in restaurants and institutions they found that every meal they sampled contained D.D.T. In some cases, the amounts were very high; in stewed dried fruit it reached 69.6 ppm and in bread it reached 100.9 ppm. When tests were made of the foods eaten by Eskimos on the Arctic shores of Alaska it was found that they were all free of D.D.T. However, a small proportion of the Eskimos themselves had small residues of D.D.T. in their tissues. These had been to the U.S. Public Health Service at Anchorage for surgery and had there eaten normal, civilized, contaminated food!

The mixing of two separate insecticides in the mammalian system can be particularly dangerous. Malathion on its own is relatively harmless because the mammalian liver produces an enzyme that detoxifies it. But if another insecticide that attacks the liver enzyme is also present, the body receives the full effect of malathion poisoning in addition to poisoning by the other insecticide. In such cases as little as one hundredth part of what is normally considered to be a "safe dose" may prove to be fatal. The common salad bowl containing a variety of different vegetables—and hence different insecticides—can be a common source of danger in this respect.

Rachel Carson is particularly scathing in her attacks on State and Federal Departments of Agriculture. She describes their efforts to control the fire ant in the southern U.S. as "an outstanding example of an ill conceived, badly executed, and thoroughly detrimental experiment in the mass control of insects." Although the fire ant has been present in the area for 40 years and there had been no report of damage to either crops or animals during the previous 5 years, the U.S. Department of Agriculture declared in 1957 that it constituted a serious threat to southern agriculture and called for a large scale chemical control campaign. In the first year an area of one million acres was sprayed from the air with heptachlor and dieldrin. Studies by biologists in State and Federal Wildlife Service, and in the universities, reported complete destruction of wildlife in some areas, together with severe losses of pigs, chickens, turkeys and livestock, and the appearance of heavy concentrations of heptachlor and dieldrin in their tissues. After 4 years of control work the director of Entomological Research at Louisiana State University described the programme as a failure because more areas were infested with fire ants than ever before, while in Florida the program was abandoned because "there are more fire ants in Florida now than there were when the program started." In the meantime, an accounting of the costs showed that whereas the mass control program had cost $3.50 per acre and had failed, the Mississippi Agricultural Experiment Station had been achieving 90-95% control at a cost of $0.23 per acre by using the cultivator and local poisoning methods.

In chapter 15 which bears the title "Nature fights back" Rachel Carson says "To have risked so much in our efforts to mold nature to our satisfaction and yet to have failed in achieving our goal would indeed be the final irony. Yet this, it seems, is our situation." There follows a series of examples of insecticide campaigns which appeared to succeed at first, but then left the situation worse than it was before. For example, blackflies in Ontario became 17 times as abundant after spraying with chemicals as they were before; an unparalleled outbreak of cabbage aphids occurred in England following the application of an organic phosphorus chemical; there was a sharp outbreak of spider mites when trees in the Western U.S. were sprayed with D.D.T. in an attempt to control spruce budworm. In Nova Scotia in the late 1940's the worst infestations of codling moth occurred in orchards that were regularly sprayed, while in unsprayed orchards the moths were not abundant enough to cause real trouble. The scheme of reduced spraying that is now practised in Nova Scotia apple orchards under the guidance of Dr. A. D. Pickett comes in for particular praise as " a sane method of insect control that takes full advantage of predatory and parasitic species. The method which he and his associates evolved is today a shining model but one too little emulated."

Chapter 16 sounds a warning regarding the development of resistant strains of insect pests. When a pest population is sprayed with an insecticide not all the individuals are killed. Some have greater resistance than others and can survive. These give rise to offspring that also have increased resistance so that a heavier dose of chemical is required to kill them. Some of these are again more resistant and survive the heavier dose so that after a number of generations the insect pests can actually be fed large doses of the same chemical that was originally used to control them. This is no dream, it is happening all the time, and is happening very quickly. In 1956 only 5 species of mosquitoes showed resistance to D.D.T. but by 1960 the number had increased to 28 and in the same year the number of known resistant species among crop-destroying insects had reached 65.

In her final chapter Rachel Carson suggests "the other road." This is the use of biological methods for the control of pests. She cites a number of spectacularly successful biological control schemes that have been carried out. For example, the control of cactus in Australia by an imported moth and the control of the screw worm in Curacao by releasing vast numbers of irradiated males which, being sterile, were unable to reproduce, so that the population eventually died out. She cites a number of other cases where success in controlling a pest insect has been achieved by the use of natural enemies, parasites and diseases. The cost of running these biological control schemes is negligible once the key to the problem has been found, but it requires a tremendous amount of diligent research, a lively imagination and, of course, adequate financial support in the early stages to uncover the necessary clues. Biological control programmes are unglamorous in their early stages as they can seldom produce the spectacular initial results that a chemical spray programme can. Moreover, when a biological control programme is running properly the insects themselves do the work and there is no opportunity for an industrial concern to make any profit. It is not therefore a field to which industrial enterprises would be attracted. In spite of the heavy cost of the initial outlay biological control methods can effect quite spectacular savings in the long run. In California, where biological control methods have been practised for many years it has been estimated that for an investment of $4,000,000 in biological control work the State has received a return of $100,000,000 and the savings continue at the rate of millions of dollars annually.

Rachel Carson points out that the rapid expansion of chemical control campaigns and the lack of awareness of the nature of the threat has come about because the majority of entomologists are working in the field of economic entomology where their research work is supported by the insecticide firms themselves. Government Departments of Agriculture have aided this trend by pouring millions of dollars into insecticide campaigns often without any more than a cursory examination of the situation with which they are dealing. At the same time there has been an acute shortage of funds for research into other branches of pest control where quick results could not be promised. Moreover, when evidence has been obtained of the inadequacy of the insecticidal campaigns and of the unpleasant side effect associated with their use, the fears of the public have been allayed either by suppressing the information or by discrediting the findings of the

Illustration from page 84 **Silent Spring** by Rachel Carson.

investigator. "This is an era of specialists, each of whom sees his own problem and is unaware of or intolerant of the larger frame into which he fits. It is also an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged. When the public protests, confronted with some obvious evidence of damaging results of pesticide applications, it is fed little tranquilizing pills of half truth. We urgently need to end these false assurances, to the sugar coating of unpalatable facts."

This, then is the theme of the book "Silent Spring." It can be stated briefly as condemning the indiscriminate use of chemical insecticides on three counts—1. They are undesirable because of the dangers to animals including human beings, 2. they are unsuccessful because, among other factors, the pest species develops resistant strains, and 3. they are unnecessary because other means of control—biological control—is available to us if we are only prepared to spend the time and money to look for it. To these three she adds the fourth point—the deliberate suppression of information by those associated with chemical control work.

Is her case sound? In the opinion of this reviewer it is. Her unfortunate decision to include in her book much that is open to question will be picked upon by the opposition as a weapon with which to condemn it. But the undeniable fact remains that much of which she says is true and proven beyond doubt. Her case should not be considered unsound because she throws in some unreliable evidence in addition. She produces definite proof that in a large number of instances chemical insecticides have proved dangerous and even fatal to animals and in some cases to human beings; she has shown instances of the failure of expensive chemical control campaigns, and she has shown that in a few instances biological control of a pest can be dramatically successful.

That this book will be the centre of a great deal of controversy goes without saying. The chemical control of pests is a major industry in which thousands of people, from manufacturers and salesmen to economic entomologists and local spray operators, depend for their livelihood. We are never more sensitive about any topic than when it threatens our source of income and opposition from the insecticide industry will be considerable. There will also be strong opposition from government Departments of Agriculture who have plunged deeply into chemical control programmes and have been treated roughly by Rachel Carson for doing so. At present, support for the book will come from those who are concerned with the protection of wildlife, from those entomologists who have been concerned for a long time about the possible consequences of the indiscriminate use of chemicals for the control of insects, and from those few members of the public who have been fortunate enough to have first-hand experience of those consequences. The bulk of the population will see no reason why they should be concerned over a controversy that seems to be on a rather technical plane and with which they are apparently not too closely concerned. However, as time goes by and the insecticide firms put into effect their avowed intention of extending the scope of their pesticide programmes, more and more people will find that they can no longer ignore this threat to their well-being and their attitude then will be interesting to watch.

The real crux of the matter of course lies in the frequency with which these phenomena occur. What is the percentage of the whole population that can expect to suffer detrimental effects through accidental contamination with insecticides? On reading the book, one almost feels the symptoms of insecticide poisoning coming on before reaching the last page. The fact is of course that far fewer people are killed by insecticides than are killed by automobiles. Should we then drastically curtail the use of automobiles? Obviously not, because their value to our society far outweighs their lethal potential. As with automobiles so with pesticides. We must take a balanced view of the whole situation. We must balance the possibility of crop losses against the dangers of contaminating the crop, the soil, and the water supply; we must balance the opportunity for profits—and employment—in the insecticide industry against the importance of wildlife, not only as a sport and as a tourist attraction, but also for its own sake; above all, we must weigh the opportunity for short-term gain against the possibility of long-term loss. There is no point whatsoever in striving to get the last bushel of crop from our land this year if in so doing we render our produce unmarketable through an excess of insecticide residue or make the soil unsuitable for food production in the future. Under these circumstances it might be better to treat the loss of a small percentage of crop as a 'kind of insurance premium that we pay to the insects to insure the continued marketability of our produce.

Most of what is said in the book refers to events that have occurred in the United States. How are we in Saskatchewan affected by it? We are a grain producing country where in our efforts to control grasshoppers, wireworms and cutworms we have poured thousands of pounds of chemical insecticides on the land every year for many years past. There appears to be no information as to whether we are contaminating our own food, but the fact that many of our fruits and vegetables come from the United States where residues have been detected in considerable quantities makes it almost certain that we, too, are eating contaminated foods. Is there any evidence of insecticide resistance in our native pest insects? None has been found but apparently none has ever been sought. It is significant that in Ontario recent tests have shown that cutworms are "highly tolerant" to dieldrin, D.D.T. and Diazinon. Is there any evidence of damage to crops? None whatsoever. Even if grain yields over the past 60 years have not shown the dramatic increases that have occurred in other crops, at least the yields have not dropped very much, and one can always argue that if insecticides had not been used the crop yields might have been much lower. Nevertheless, there appears to be little diminution of grasshopper outbreaks in spite of the heavy expenditure on insecticides. It was officially predicted that 1962 might provide us with one of the worst outbreaks in Saskatchewan's history. Admittedly this is only one year in many and it is not anticipated that 1963 will be quite as bad but one might have hoped to see a considerable drop in numbers. Once again, it can always be argued that if insecticides had not been used the situation would have been far worse; and as long as no properly controlled experiments are undertaken to test this possibility, the matter remains in doubt. But it is also certain that no one has ever shown that crop yields in this province have been increased by the use of insecticides and in view of the possibility of deleterious side effects one might at least question whether the expense of a large scale insecticide campaign is justified. Is there any possibility that biological control methods could be used against grasshoppers? Some preliminary work was started a few years ago but none is being done at the present time. Is there any evidence that the use of insecticides has had any deleterious effect on the wildlife of Saskatchewan? There appears to be no evidence that it has. The gradual decline in the duck population over the past 6 years can be explained perfectly logically by the increasing drought conditions that have occurred. There is no reason at all to link it with the increased use of dieldrin that began in 1956, though of course lack of evidence of a relationship cannot be taken as proof that such a relationship does not exist. Ducks taken from hunters bags in Colorado have shown the presence of dieldrin in amounts to 30 ppm but no tests appear to have been made on ducks shot in Saskatchewan.

In summary, then, we in Saskatchewan either have no problem with insecticides, or if we have, we are unaware of it. However, the possibility that we shall have one in a few years time is very real. If we do nothing else, we should at least begin to look very carefully at the situation in this Province and try to find out just what effect insecticides are having, not only on the pests against which they are being used and on the crops that they are supposed to protect but also on our wildlife and on ourselves. Alternatively, we can ignore Rachel Carson's warning, we can overlook the noisy arguments that will be fought out south of the border and we can enjoy the peace and quiet of our countryside—in silent Saskatchewan.

Getting To Know Our Less Common Birds

by **Margaret Belcher** and **Maureen Rever**, Regina

Saskatchewan birders are always thrilled when birds better known in other areas make their appearance in this province. But it is often difficult for the inexperienced birder to be sure of the identity of the stragglers he is seeing for the first time. For this reason, most of us travelling outside the province are eager to get to know the birds that may one rare day come to feed in our own backyard or flit through the shrubbery in a wave of spring migrants. This was the way we felt when we set out in late May of this year on a two weeks' trip into the mid-western states. Although our main purpose was to collect *Astragalus*, we looked forward to doing some bird watching along the way, and long before we left Regina we were checking in Peterson's field guide the western species that we hoped to become better acquainted with.

Any species classed as a "straggler" on the Saskatchewan field check-list deserved special attention, but there were many other birds of almost equal interest to us simply because we had never seen them ourselves. Some few species that come to us only as migrants we would perhaps see on their breeding grounds. We hoped that we would find dippers and harlequin ducks on the mountain streams and would learn the warbled song of the Townsend's solitaire which has endeared itself to Regina bird watchers by its unusual winter appearances in the city. We would look for the beautiful Steller's jay of the Lansdowne painting used for the Audubon Society's Christmas card, and for the piñon jay in the piñon (although we weren't too sure at that point what "piñon" was!). We would perhaps add to our list the tiniest of the hummingbirds, the calliope, and the beautiful violet-green swallow. We would watch for the western tanager that was reported in Regina just after the **Birds of Regina** went to press, and for the cinnamon teal which we had never been on hand to see during its several appearances in the Regina area.

We left Regina by car on May 29 and before the day was over we were already viewing a changing scene. Going south on Highway #6 we noted how two birds of the dry prairies—the chestnut-collared longspur and lark bunting—became more abundant as we neared the United States border. This helped to prepare us for the great numbers of lark buntings that seemed to us the most striking feature of bird life on the Montana plains. Another interesting observation of adaptation to this treeless plains habitat was the crow's nest on a telephone pole that we saw along the highway before we left Saskatchewan. This observation took on added interest later when we read Bob Nero's comment in the **Blue Jay** (September, 1962) on a similar nest site at Boharm, Saskatchewan.

We stopped for our first "coffee break" beside a slough over which three kinds of swallows were skimming—cliff, bank, and rough-winged, the latter quite uncommon at Regina and therefore getting special attention as we tried to follow them with binoculars. Then for our picnic dinner we drove off the highway into the rolling hills of the Missouri River Valley near Culbertson and found a little draw with trees and shrubs near a stock corral. Although it threatened to rain, this spot was a delight. At the corral a pair of red-headed woodpeckers kept moving elusively away from the camera, but were finally photographed. This woodpecker has been reported on several occasions this year in southern Saskatchewan, interestingly enough on dates close to that of our observation of the two woodpeckers on territory in Montana. A later record for June 27, 1962, of a male bird that Bob Symons watched for an hour and a half at Pelican Point, Last Mountain Lake, raises the question of the status of the bird—was it a breeding bird or summer wanderer?

Beyond the corral were mountain bluebirds, rufous-sided towhees and lazuli buntings, for which the grove of trees provided nesting territory.

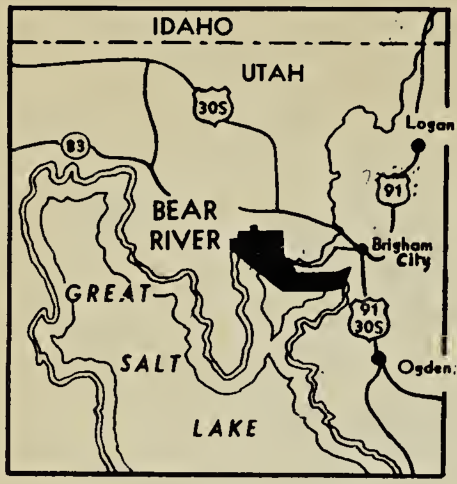
Photo by M. Rever

Snowy Egrets at the Bear River Refuge.

Indeed, this attractive little bit of bird habitat came very clearly to mind later in the summer when an expedition with George Ledingham into the "dirt hills" of Avonlea, Saskatchewan, on July 20 discovered lazuli buntings in an almost identical setting. The rolling hills at Avonlea constituted typical Missouri coteau countryside with occasional bluffs and sheltered coulees. Two male buntings were seen, about three miles apart, moving back and forth from clumps of aspen and box elder, with shrubs like willow, buffalo berry, snowberry and wild rose. This setting, and the lovely colours of the male bunting, recalled vividly our introduction to the lazulis in Montana.

It is a commonplace that habitat usually provides the key to the birds to be found in any given spot. This idea is developed by Olin S. Pettingill, Jr., in his guides to bird finding. Even though our bird watching was very casual, we made good use of his **Guide to bird finding west of the Mississippi (1953).** In the Medicine Lake National Wildlife Refuge in Montana, we watched from the shoulder of the highway the characteristic species of a prairie marsh, and again in northern Utah we looked for marsh birds in the deservedly famous Bear River Migratory Bird Refuge. There were no new species for us at the Medicine Lake refuge, but the Bear River marshes introduced us to birds we had never seen before which we shall now be prepared to look for in similar habitat in Saskatchewan. Seeing so many black-necked stilts showed us that this bird, still a hypothetical species on the Saskatchewan list, is so definitely marked that any experienced observer could identify it with assurance. And if a small white heron with black legs ever lifts its curious yellow feet out of the shallow waters of the Qu'Appelle River flats, we shall not fail to recognize it as a snowy egret!

The Bear River Migratory Bird Refuge on the delta of the Bear River where it empties into Great Salt Lake is one of the outstanding waterfowl areas in North America. It was established in 1928 to safeguard waterfowl against losses from botulism, and the 64,000 acres of the refuge are still maintained for the protection of nesting waterfowl and the great flocks of migrants that rest there in the spring and fall. We thought with envy of the A.O.U. birders who would be visiting the refuge in August when the migrant waders arrive in thousands, but even in early June with only resident species at the refuge, a visit there is a thrill for anyone who has never seen such birds as the snowy plover, black-necked stilt,



Bear River Refuge

snowy egret, white-faced ibis and cinnamon teal. Since the blue wing is the familiar teal of our Saskatchewan pot-hole country, we were amazed to find the cinnamon teal apparently much more common here, as we travelled the 12 miles of dykes enclosing one of the units in which the water from the Bear River is impounded and distributed. The teeming life of the refuge we viewed again this fall when Allan D. Cruickshank brought his Audubon Screen Tour film of the Bear River to Regina.

One of the attractions for visitors to the Bear River refuge are the migrating swans, which of course we did not see. However, we did have a very good view of a pair of nesting Trumpeters as we came into Idaho from West Yellowstone, at Swan Lake —to which the Trumpeters have given their name.

Birds of the sagebrush country interested us because we felt that these species could be looked for also in the dry prairie ranchlands of southwestern Saskatchewan and along the South Saskatchewan River above the "elbow." Our first Brewer's sparrow, on a sage-covered hillside sloping down to the Soda Butte Creek in Yellowstone Park, we had almost dismissed as a pale-colored Clay-colored when we realized that the latter was not on the list for the park. By the following day, however, we had become quite familiar with the Brewer's sparrow through its song which we heard so often in sagebrush pastures fringing the sand dunes where we were hunting for *Astragalus* near St. Anthony, Idaho. There we also found sage thrashers, our attention having been called to them too by their song. These are birds that are well enough known in Saskatchewan, but only locally. Bob Nero called the Brewer's sparrow "common" in the Val Marie district this summer when he was visiting the prairie dog colonies, and there it has the added interest of sharing the same range as the clay-colored sparrow which it resembles in appearance, though not in song.

On a sage-covered slope of Malad Summit in southeastern Idaho, interspersed with shrubs and some larger trees, we tracked down two green-tailed towhees on June 2, and were especially pleased to find two nests with three and four eggs, in low sagebrush. The distribution of this bird is known to be the mountain districts of the western states, and yet a male bird appeared (and was collected to prove it) in a wooded coulee on a farm on the Regina plains in June, 1929 (**Birds of Regina**, 1961). This goes to show that the bird watcher is justified in keeping eyes and ears open for unexpected strangers!

In the evergreen forests of the higher mountains we saw the Clark's nutcracker which many Saskatchewan birders have seen in the Canadian Rockies and which has been reported from the Cypress Hills. Also on a mountain side, up the Hobble Creek near Springville, Utah, our first western tanager called its dry "pic-tic" note from the top of a very tall narrow-leaved poplar. We did not both see the bird then, but we had good views later on an early morning birding expedition on Moscow Mountain, in Idaho. We ourselves have never seen the western tanager in Saskatchewan, but it is described as a "rather rare summer resident" at Nipawin (C. Stuart Houston and Maurice G. Street, **The Birds of the Saskatchewan River**, 1959). In the observation of three birds at Cumberland House, June 18, 1958, which is given as the easternmost record for this latitude (*ibid.*), it interests us that the birds seen by Stuart and Mary Houston, T. E. Larsen, and Russell Robertson, were—like our first bird—in high poplars.

The bird hike on Moscow Mountain also gave us our first view of the calliope hummingbird, a tiny but showy male with the curious red rays across his throat by which we were able to identify him. Earlier, on Mt. Washburn in Yellowstone Park, we had come upon the varied thrush and Audubon's warbler on a tramp up a mountain road, two species that we have actually seen in Saskatchewan; but the striking Steller's jay along the wooded slopes of the rugged Price Canyon was a "first."

We saw our first black-headed grosbeaks on the higher slopes, too, but we associated them with a shrubby type of cover rather than with the heights of Malad Summit. This bird, too, appears casually in Saskatchewan and the most recent record we know of is Bob Symon's observation at Pelican Point — although Symons searched diligently for a nest, he found none, but up to three young were seen with the adults several times from July to September, and two young were seen for a last time on Oct. 13. On our trip, the Bullock's oriole, another species occasionally seen in Saskatchewan, was present near farms and homes, as the Baltimore oriole would be with us.

When we saw species like the dipper or the varied thrush which are still listed as hypothethical for Saskatchewan because sight records have not been backed up by specimens or authentic photographs, we felt reasonably sure that it was only a matter of time before they would be added to the official list. The real fun comes in speculating on which ones of the birds that you are seeing for the first time outside the province will turn up some day for the first time in Saskatchewan. Stuart Houston tells us to look for house finches, and certainly we found them common in many kinds of places in Idaho and Utah. David Chandler of Masefield, we think, would bet on the violet-green swallow which he feels he may have seen this spring with other migrant swallows. This seems a real possibility, since the violet-green swallows have nested in the Red Deer area of Alberta (W. R. Salt and A. L. Wilk, **Birds of Alberta**, 1958.) Why, too, should we not see the Barrow's goldeneye that nests in the mountains and foothills of Alberta, at least in migration, swimming on a shallow slough in the Cypress Hills, let us say, as we saw them in Yellowstone Park?

Many of the birds we saw here were new to us, but some of our most enjoyable observations were of familiar birds seen in a new perspective. Cliff swallows, which have to resort to building under bridges on our prairies, were studied with renewed interest at natural nesting sites like the rock wall of Lamar Canyon. Occasionally, too, we were

Photo by M. Rever

Alpine meadow where pipits and horned larks nest.

introduced to the breeding habitat or behaviour of birds which we have only in migration. Nothing charmed us more than to hear the aerial flight song of water pipits as we ate our lunch at 10,800 feet in the Bear Tooth Pass on an alpine meadow from which the snow had just melted to reveal the first clumps of mountain marigold, carpet pink and alpine forget-me-not.

Driving on over the pass from that alpine meadow our view was often cut off by the high snowbanks, for we were on the road the first day that it was open to traffic. One bank along the road, we later learned, measured 29′ 6″, and yet everywhere over the snow the horned larks and pipits rose in song. The pink Chev, with its nose nudging a Highways Department patrol truck, was only travelling five or ten miles an hour, so we had time to watch them, and to get a good look at a black rosy finch which thrilled us by perching briefly on the highway railing.

To do our expedition justice, it should be said that it was more productive botanically than bird-wise. However, the two weeks of plant collecting gave us opportunities to watch for new birds; that is, when our eyes weren't glued to the ground looking for *Astragalus*! In addition to the *Astragalus* collections, we brought back a lively interest in the birds less commonly seen in Saskatchewan.

Sixth Annual May Day Count

Saskatoon Natural History Society, May 26, 1962

As an experiment the Saskatoon Natural Society decided this year to record the birds seen within a 25-mile radius of the city. Because the area was so extensive, it was impossible to make a count of individuals. Instead, the circle was divided into segments, and a record of occurrence kept within each segment. The 24 observers were divided into 5 parties. Observations extended from 4.30 a.m. to 9:00 p.m. Temperatures ranged from a low of 47° at 5:00 a.m. to a high of 78° at 5:30 p.m. Winds were light; the sky varied from clear to slightly cloudy. 127 species were identified, 27 more than last year, and 15 more than the previous record of 112 set in 1959 (within a 7½ mile radius).

SPECIES LIST: Horned Grebe, Eared Grebe, Western Grebe, Pied-billed Grebe, Great Blue Heron, Black-crowned Night Heron, American Bittern, Mallard, Gadwall, Pintail. Green-winged Teal. Blue-winged Teal, American Widgeon, Shoveler, Redhead, Ring-necked Duck, Canvasback, Lesser Scaup, Bufflehead, Ruddy Duck, Cooper's Hawk, Red-tailed Hawk, Swainson's Hawk, Marsh Hawk, Peregrine Falcon, Pigeon Hawk, Sparrow Hawk, Sharp-tailed Grouse, Ring-necked Pheasant, Gray Partridge, Sandhill Crane, Sora, American Coot, Semipalmated Plover, Killdeer, Golden Plover, Black-bellied Plover, Ruddy Turnstone, Long-billed Curlew, Upland Plover, Spotted Sandpiper, Willet, Greater Yellowlegs, Lesser Yellowlegs, Knot, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Dunlin; Stilt Sandpiper, Semipalmated Sandpiper, Marbled Godwit, Sanderling, Avocet, Wilson's Phalarope, Northern Phalarope, California Gull, Ring-billed Gull, Franklin's Gull, Common Tern, Black Tern, Rock Dove, Mourning Dove, Great Horned Owl, Burrowing Owl, Yellow-shafted Flicker, Hairy Woodpecker, Downy Woodpecker, Eastern Kingbird, Western Kingbird, Eastern Phoebe, Least Flycatcher, Horned Lark, Tree Swallow, Bank Swallow, Barn Swallow, Cliff Swallow, Blue Jay, Black-billed Magpie, Common Crow, Black-capped Chickadee, Red-breasted Nuthatch, House Wren, Catbird, Brown Thrasher, Robin, Swainson's Thrush, Veery, Mountain Bluebird, Water Pipit, Sprague's Pipit, Cedar Waxwing, Loggerhead Shrike, Starling, Warbling Vireo, Black-and-white Warbler, Tennessee Warbler, Orange-crowned Warbler, Yellow Warbler, Blackpoll Warbler, Yellowthroat, American Redstart, House Sparrow, Bobolink, Western Meadowlark, Yellow-headed Blackbird, Red-winged Blackbird, Baltimore Oriole, Brewer's Blackbird, Common Grackle, Brown-headed Cowbird, Rose-breasted Grosbeak, American Goldfinch, Rufous-sided Towhee, Savannah Sparrow, Baird's Sparrow, Vesper Sparrow, Lark Sparrow, Chipping Sparrow, Clay-colored Sparrow, Harris' Sparrow, White-throated Sparrow, Lincoln's Sparrow, Song Sparrow, Lapland Longspur, Chestnut-collared Longspur. Compiler: **Frank Roy,** Saskatoon.

Regina TV Tower Mortality

May 11-12, 1962

by **Robert W. Nero**, University of Saskatchewan, Regina.

Three instances of mass bird mortalities at TV towers have so far been reported for Saskatchewan, involving 33, 94 and 113 collision casualties (**Blue Jay**, 17: 142-143; 19: 160-164). These kills occurred during fall migration, from September 3 to September 22. The present note describes a mortality which occurred during spring migration.

On May 12, 1962, a party of five birders, participating in the Regina Annual Spring Bird Census (**Blue Jay**, 20: 115, 131), checked the grounds at the CKCK TV tower and discovered that a kill had occurred. This group included Herb and Ruth Tempel, Loraine MacPherson, Elsie Cheesman and Fern Lawrence. We are indebted to these people for their interest and co-operation in providing this information. These five people searched the grounds at the station early in the morning for one hour, recovering 31 specimens of five species (Table 1, May 12). Early the following morning my wife and I painstakingly searched the area again, including the various roofs of the station buildings, and found an additional 28 specimens of five species (Table 1, May 13), mainly north and west of the tower. All of these birds seemed to us to have been killed at the same time as the sample picked up on May 12. It is of interest to note that, in spite of the low numbers, the two samples are remarkably similar. We should point out that the station grounds included some very muddy and dense weedy sections; when I queried the Tempels they said that they had not covered these areas and, in fact, had even seen some birds lying in the mud and had passed them by. Accordingly, these two samples have been combined to make a total of 51 individuals of six species. Thrushes of two species make up 81 per cent of the total kill, a relatively high proportion. These two thrushes were abundant throughout the Regina district on May 12, 400 Swainson's Thrushes and 30 Gray-cheeked Thrushes being reported by the 11 teams in the field. Lower numbers for the latter species may be due in part to a greater difficulty of identification.

This spring kill was undoubtedly the result of the occurrence of large numbers of migrants from the south coinciding with bad weather during the night of May 11 and the early morning of May 12. John F. Quine, Meteorological Officer, Regina Weather Office, kindly provided the following information which describes these unfavorable conditions. **May 11:** 6.00 p.m.—ceiling 800 feet, light drizzle, wind E-SE at 14 mph.; 9:00 p.m. — ceiling 300 feet visibility one mile, wind E-SE at 18 mph; 12:00 p.m. — ceiling 300 feet, fog, visibility four miles, wind SE at 18 mph; **May 12:** 1:00 a.m.—ceiling 200 feet, light drizzle, fog, visibility four miles, wind SE at seven mph.; 3:00 a.m.—ceiling 200 feet and broken, light drizzle, fog, visibility four miles, wind S-SE at eight mph.; 4:00 a.m.—overcast, light drizzle, fog, visibility three miles, wind S-SE at 12 mph.; gradually improving conditions; 6:00 a.m.—ceiling 200 feet, broken clouds, light rain, visibility eight miles, wind SW at 11 mph. The temperature throughout this period was constant at about 45° F. Fair and sunny weather prevailed from mid-morning on May 12, overnight and through May 13.

Migrants borne in on favorable winds are forced down by low clouds, rain and fog, and under such conditions they may blunder into high obstructions. TV towers, with their lights, numerous supporting wires, etc., seem to pose a special obstacle to nocturnal migrants. It may be expected that a duplication of the above conditions will produce other kills, hence persons who live close to TV towers ought to make a special effort to check and record the occurrence, or the **lack** of occurrence, of mortalities. In the next few years we can expect to see a considerable increase in the numbers of towers erected in the province. These should all be watched carefully.

The Tempel party also found a pair of Lapland Longspurs on the morning of May 12 at a radio tower on old No.

1 Highway, east of Regina, no doubt casualties of the same bad weather. On May 13 single specimens of three additional species—House Sparrow, Tree Sparrow and Snow Bunting—were found by us on the CKCK station roof, but these were all one to four weeks old.

One Swainson's Thrush, among those found by the Tempel party, exhibited random partial albinism. White feathers occurred irregularly in the plumage as follows: on the top of the head, on the nape and back of the lower neck, on the sides of the head at the angle of the jaws, a lesser covert on the right wing, in the scapulars and on the back and rump. Areas which were especially affected were the nape and sides of the head (29 feathers), and the rump (10 feathers). A total of 48 white feathers was counted; in all cases, the whole feather was pure white. The bird was apparently otherwise normal.

TABLE I—Birds recovered at TV tower, May 12-May 13, 1962

	Species	May 12	May 13	Combined	Male	Female
1.	Swainson's Thrush	14	9	23	15	8
2.	Gray-cheeked Thrush	11	14	25	14	11
3.	Blackpoll Warbler	3	2	5	4	1
4.	Savannah Sparrow	2	2	4	—	—
5.	Clay-colored Sparrow	—	1	1	—	1
6.	White-crowned Sparrow	1	—	1	—	1
	Totals	31	28	59		

Fall Migration TV Tower Kills, 1962

by **Fred Lahrman**, Sask. Museum of Natural History

The TV towers at Regina, Moose Jaw and Caron were checked on selected weekends during September and October by myself and other members of the staff of the Saskatchewan Museum of Natural History. In summarizing the kills noted on these occasions, we were once more struck by the fact that the species represented and the numbers involved in the kill did not necessarily coincide with those most commonly reported for the same dates by persons observing the fall migrants that normally come down in the area.

On September 7, 1962, I visited the CKCK TV tower at Regina with A. Swanston, R. Carson and F. Bard, and recovered 52 birds of 14 species, as follows: Red-eyed Vireo (10), Philadelphia Vireo (1), Warbling Vireo (1), Tennessee Warbler (4), Yellow Warbler (3), Bay-breasted Warbler (5), Blackpoll Warbler (2), Palm Warbler (1), Ovenbird (13), Northern Waterthrush (4), Connecticut Warbler (3), Yellowthroat (1), Wilson's Warbler (3), House Sparrow (1). The number of Bay-breasted Warblers (5) among the warblers found on this date fits in with the three birds of this species, formerly regarded as very rare in Regina, which were recovered by R. W. Nero at the Regina TV tower on September 3, 1961 (see **Blue Jay**, 19:161).

The following day, September 8, Mr. Bard and I checked the TV tower at Moose Jaw, finding 1 Sora and 1 Savannah Sparrow.

On the weekend of October 6-7, two visits were paid to the CKCK TV tower at Regina when the species recovered of course differed noticeably from those reported a month previously. The most interesting find was a Yellow Rail which I picked up on October 7 and reported to Margaret Belcher as a new record for the check-list of the birds of Regina. In addition, we recovered Common Snipe (2 on Oct. 7), Swainson's Thrush (2 on Oct. 6; 1 on Oct. 7), Grey-cheeked Thrush (1 on Oct. 7), Orange-crowned Warbler (5 on Oct. 6; 3 on Oct. 7), Myrtle Warbler (3 on Oct. 6; 1 on Oct. 7), Yellowthroat (1 on Oct. 6), Savannah Sparrow (3 on Oct. 6), Vesper Sparrow (1 on Oct. 7).

At Caron, five visits were made to the TV tower in September, with the following recoveries: Sept. 9—Coot (1), Swainson's Thrush (1); Sept. 12—Sora (2), Chestnut-sided Warbler (1) (my first fall migration record); Sept. 14—Red-eyed Vireo (1); Sept. 15—Ovenbird (1); Sept. 30—Sparrow Hawk (1) (dead for several days).

FIRST YELLOW RAIL RECORD FOR REGINA

by **Margaret Belcher**, Regina

The Yellow Rail (*Coturnicops noveboracensis*) recovered by Fred W. Lahrman at the TV tower at Regina on October 7, 1962, and reported in the preceding article of this issue of the **Blue Jay**, constitutes the first record for Regina.

The bird collected at the tower was shown to me later at the Saskatchewan Museum of Natural History by Fred Lahrman—the first Yellow Rail that I have ever seen. However, I had the good fortune this past summer to hear a Yellow Rail with Manley Callin and a small group of birders who were exploring the marshy meadows at the west end of Pasqua Lake in the Qu'Appelle Valley as part of the field trip program of the Saskatchewan Natural History Society's annual summer meeting (June 16, 1962). The notes we heard were not the commonly described series of "ticking" sounds, but another sequence that Manley Callin recognized as being identical with that recorded by Roger Tory Peterson in his "Field Guide to Bird Songs". Returning from the marsh, we stopped at the Callins' home to listen to the Peterson record and thus verify the identification. Mr. Callin was pleased to find the Yellow Rail at Pasqua Lake since he has heard them farther east in the Qu'Appelle Valley in the marshes at El Capo, Round and Echo Lakes.

This shy and elusive bird is difficult to locate, except by sound, as was well shown by R. D. Symons in his "Random notes on the Yellow Rail" in the **Blue Jay**, 14:8-19, March, 1956. Locating the Yellow Rail mostly by ear, Mr. Symons was able to plot its range at Moosomin and Davidson, and from Saskatoon through Battleford to Lloydminster and north to Midnight Lake. Records of its being heard in the Carlton area and seen at Prince Albert (C. S. Houston and M. G. Street, **Birds of the Sask. River**, 1959) and specimens from the north end of Last Mountain Lake (Carnegie Museum, Pittsburg), Battleford and Somme (SMNH), help to confirm the impression that the distribution of the Yellow Rail is rather general throughout Saskatchewan in suitable habitat.

Dr. R. W. Nero has called attention to the fact that Yellow Rails do not appear to have been commonly reported at TV tower kills. In the survey of casualties at a Florida tower (Herbert L. Stoddard. 1962. Bird casualities at a Leon County, Florida TV tower, 1955-1961) not a single Yellow Rail was found, although it is considered a much commoner bird than the little Black Rail of which three specimens were collected. Again, when the results of five tower-kills in Wisconsin from 1957 to 1959 were tabulated (Charles A. Kemper. 1959. More TV tower destruction. **Passenger Pigeon**, 21:135-142) two immature Yellow Rails were considered among the most remarkable specimens.

A GOLDEN-WINGED WARBLER IN REGINA

by **Frank Brazier**, Regina

At 8:30 a.m. on May 18, 1962, I was walking in the Legislative Grounds in Regina when I noticed a number of small birds on a lawn. As I raised my binoculars a small grayish and yellow bird, superficially like a Myrtle Warbler, flew across my path and into a nearby tree. Myrtles were plentiful and I paid no particular attention to this bird. While I inspected those on the lawn (they were Chipping Sparrows), however, something about this one nagged at me, and suddenly I got it—no yellow rump! I swung my 10 x 50's to where the bird obligingly waited, back towards me. I stared in disbelief . . . no rump patch, and dull yellow shoulders—I suspected the unbelievable . . . and then it turned and faced me—an adult male Golden-winged Warbler (*Vermivora chrysoptera*)! In bright sunlight his golden forehead, black face bar and black throat at no more than 30 feet were unmistakeable. And then he sang—his unpretentious vocal effort turned out to be the second song described in Griscom and Sprunt's **The Warblers of America** (New York, Devin-Adair, 1957).

Griscom and Sprunt give the breeding range as from southeast Manitoba, central Minnesota, southeast Ontario, central New York and southern Vermont, and Massachusetts south to southern Iowa, northern

Illinois, northern Indiana, northern New Jersey, eastern Tennessee, and in the mountains to northern Georgia. Of special interest for us is the section at the end of the book where W. Earl Godfrey has summarized the status of the warblers in the prairie provinces and states that "the Golden-winged Warbler has been reported in the migration season from Winnipeg, Portage-la-Prairie, Aweme, Ponemah Beach, Whitemouth and Vivian, all in southern Manitoba. B. W. Cartwright (in litt.) stated that on July 22, 1932, he, T. M. Shortt, and others succeeded in finding three 'family groups' at Vivian, three specimens of which were collected."

I had never heard of any record of this bird for Saskatchewan so obviously I needed someone to confirm my observation. I left the park at once in my car to get other observers, and within an hour several others were combing the area. However, frustration was the lot of us all as the warbler was not seen again.

VIRGINIA RAIL NEST IN ALBERTA

by **Dennis Gallaway**, Czar, Alberta

Mr. Thomas Randall's comments on finding the nest of a Virginia Rail in Alberta (see his autobiography in **Blue Jay**, 20: 62) has led me to report the following information. In June of 1943 I found a nest of this species some 17 miles southwest of Czar, Alberta, on the SW ¼ of 27-38-7. Czar is about 35 miles from the border of Saskatchewan on Highway #13. The nest was in a shallow slough with about six inches depth of water and it was fairly well hidden in lush grass. There were 13 eggs in the nest. Mr. David Penman of Czar, and his two boys were with me at the time and the nest was found on their land. Also, in the previous year I had found another Virginia Rail nest in a shallow slough on my own farm at Czar, but details were not available.

Editor's Note: Salt and Wilk in **The Birds of Alberta** mention a nest found at Brooks and note that because of the secretiveness of this rail it may or may not be as scarce as the few records indicate.

MARBLED GODWIT RANGE EXTENSION IN ALBERTA

by **David Stirling, Victoria, B.C.**

Salt and Wilk state in **The Birds of Alberta,** 1958, that the Marbled Godwit has not been recorded north of Rochester, Alberta. We have some evidence to suggest that the species nests in the vicinity of Athabasca which is about 25 miles north of Rochester. In July, 1947, I saw two adults and two grown young at a slough about five miles east of Athabasca. I lived at Athabasca for a number of years but this was my only record of the Marbled Godwit. More recently, in early July, 1962, my wife, Ruth Stirling, observed a pair of Marbled Godwits at a slough about five miles north of Athabasca. Although no nest was found the birds acted in a way that indicated a nest in the vicinity.

POSSIBLE DICKCISSEL RECORD FOR THE REGINA AREA

by **Doug Gilroy**, Boggy Creek

On September 4, 1962, I saw what I am almost sure was a flock of Dickcissels. It was almost 3:30 p.m.; I was driving down a side road near Condie when up flew a flock of 15 to 20 birds in front of the car. Although I did not have binoculars with me, I had a good chance to observe them at close range; I could see their bright yellow breasts which made them look like a flock of small meadowlarks. In fact, to add to the momentary confusion, two or three meadowlarks flew with them. However, when they lit out amongst the swaths, it was plain to see they were much smaller than meadowlarks. I judged them to be similar in size to Harris' Sparrows. They had brownish backs but as far as I could see there was no black V at the throat such as the Dickcissel is supposed to have. But I understand that in the fall and juvenile plumage this V is minus or nearly so. I had never seen any birds just like them and the only tag I can nail on them is Dickcissel.

According to Margaret Belcher's **Birds of Regina** (1961), the Dickcissel has been practically unknown in the Regina area except when a small colony of these birds nested on the golf course near the R.C.M.P. barracks for two successive summers during the dry 30's (1933, 1934).

Extensive Fall Wandering Of Immature Horned Owl and Magpie

by **C. Stuart Houston,** Newton Highlands, Mass., U.S.A.

Three banding recoveries showing extensive fall wandering by immature birds, two Great Horned Owls and one Black-billed Magpie, seem of interest since these birds belong in the category of "year-round residents." A nestling Great Horned Owl banded three miles west of Vonda, Saskatchewan (with the assistance of Bernie Gollop and Jim Slimmon), on May 24, 1961, was reported shot by a hunter (letter of November 13, 1961) near the Sheyenne River, near Sheldon, North Dakota, about 570 miles southeast of where it was banded. A nestling Great Horned Owl banded six miles south of Dilke, Saskatchewan (with the assistance of Wilfred McArton and J. B. Belcher), on May 20, 1961, was shot during the 1961 fall hunting season near Willow City, North Dakota, or about 270 miles southeast of where banded. A nestling Black-billed Magpie banded eight miles north and one mile west of Zehner, Saskatchewan (with the assistance of George Chopping), was shot by a hunter October 29, 1961, near Milton, North Dakota, about 320 miles southeast of where banded.

These birds were all immatures and all three went southeast. Of a total of 29 recoveries from 303 banded Great Horned Owls, and five recoveries from 109 Black-billed Magpies, the remainder have been within 50 miles of the place of banding, with only one other exception. This was a Great Horned Owl recovered 19 months later in Minnesota some 450 miles southeast of the banding locality, as already reported (**Blue Jay** 16:60, 1958). These fragmentary records suggest to me that perhaps ten per cent of young Great Horned Owls and Black-billed Magpies may wander far afield from Saskatchewan, usually in their first year of life. A need for further banding studies seems indicated.

Great Horned Owl Photo by Fred W. Lahrman

Unusual Feeding Behaviour of Chickadee

by **Robert W. Nero**, Regina

A biological niche which I had not previously noticed was recently called to my attention by the foraging behaviour of a Black-capped Chickadee. On October 2, 1961, in the middle of the afternoon, while driving along a country road some six miles northwest of Regina and within a quarter of a mile of the wooded Wascana Creek valley, we found a chickadee feeding on the tops of wooden fence posts. When we first saw the bird it was perched on a post in a fence line which ran right beside the road; since the situation provided a nice opportunity for the entire family to look at a chickadee we stopped to watch it. In a moment the bird flew to the top of the next post in line, so we drove slowly alongside again for another look. During the next several minutes we followed the chickadee as it flew from one post to another, heading north along the roadside fence, for about a quarter of a mile. It spent a few seconds, less than a minute usually, at nearly every post, evidently searching for food, especially on the top of the post. Each time it flew it dipped down low, then soared up again to land on the next post. It was especially interesting to note that it skipped the few iron fence posts which were in the line and occasionally it flew past very small wooden posts, but otherwise it foraged on practically every post. Eventually the chickadee left the fence line in favor of a telephone pole circuit which joined the fence, the higher poles evidently being more to its liking. We finally stopped following the bird but noted that it continued north along the line of telephone poles as long as we watched, dropping down low then abruptly rising up again to land on the next pole and so on. A second chickadee was shortly seen foraging in a similar way on a nearby line of telephone poles.

We stopped to examine a few posts in an adjacent fence in order to learn what the chickadee might have been feeding on. Some small live spiders, a common food of the chickadee according to the Bent "Life history" series (Bulletin 191), were found on a few post tops. In addition, nearly every post top had a quantity of old bird feces, often containing insect remains, but it seemed to me that these would be low in food value. Spiders and small insects were presumably the main attraction for the chickadee. The afternoon sun may have warmed the post tops as well as the spiders which found this a useful area in which to hunt their prey, thus providing this unusual niche for the chickadee to exploit. Although the chickadee primarily searches for food in woods and brush the fence-post niche may provide a useful supplementary source of food, especially on the prairies.

PREDATORY CROW

by **Bernard C. Haysom**, Regina

On September 1, 1962, while travelling west on #1 Highway, Johan Toews and I sighted a small flock of swallows perched on telephone wires and on a pole about one mile west of Ernfold (45 miles east of Swift Current). A moment later we noticed two crows heading toward the pole on which the swallows were sitting and, as we expected, the swallows soon took flight. Noticing a fluttering movement on the far side of one of the cross-arms, I thought that one of the crows had missed its target and was caught on the pole or on a wire. All this was observed as we approached at highway speed. As we passed this particular pole, I turned in my seat to see just what had happened. To my surprise, I saw that the crow was perched on the crossarm support with a struggling swallow clutched firmly in one foot. Unfortunately, with the surprise and being on #1 Highway, Johan was unable to stop. Thus we are uncertain of the species and age of the swallow. Because the telephone pole obscured my vision, I was unable to see the actual capture.

Large Eared Grebe Colony At Regina, 1962

by **Fred W. Lahrman**, Sask. Museum of Natural History

Eared Grebe on nest at Regina Waterfowl Park, 1962

Last year we reported an Eared Grebe colony at the Regina Waterfowl Park where a total of 48 nests were under observation during the summer (**Blue Jay**, 19:170-171). This colony was of local interest because no large colony of Eared Grebes had been noted in the Wascana marshes since the 40's and early 50's, when up to 25-30 pairs nested. The extent of the 1962 colony at the Regina Waterfowl Park was even more striking—37 nests east of the Broad Street bridge, 8 nests east of the pipeline at the city power house, 106 nests north of "Goose Island" (the largest island in the park), and 14 south of Goose Island—a grand total of 165 nests.

The first Eared Grebes to arrive in the area were seen on April 25, 1962, by Margaret Belcher and Maureen Rever, in a great influx of diving ducks—several birds being noted on Wascana Lake and several at the Waterfowl Park. By June 8, I saw that the grebes were building nests, and on July 5 I counted 165 nests in the location described above. On July 13 most of the grebes had hatched, and only a few grebes were still on their nests. The small colony south of Goose Island was started later, and the young there hatched by July 30th.

LOGGERHEAD SHRIKE versus BREWER'S BLACKBIRD

by **Bernard C. Haysom**, Regina

On May 12, 1962, Bob McCall and I observed a Loggerhead Shrike in a small grove of trees on the Regina Golf Course briefly attack a Brewer's Blackbird. A male blackbird flew into the grove and landed in the same tree in which the Shrike was perched. The shrike seemed to frighten the blackbird for it flew away at once, landing on the ground at a distance of about 30 feet. Hardly had the blackbird settled on the ground when the shrike flew up about 25 feet in the air and then went into a power dive with the blackbird as the target. The attack appeared to be an effort to drive the blackbird away for the shrike struck quite hard at the blackbird. The blackbird went up about three feet in the air then flew rapidly away. The shrike returned to perch in the same tree. Birds on territory frequently drive off species larger than themselves and we presume that the shrike was on its territory in this case. Even so, we were surprised to see an encounter of this nature.

Birds of Lynn Lake, Manitoba

by **Ronald R. Hooper,** Punnichy, Saskatchewan

The following brief list of birds observed at or near the mining town of Lynn Lake, in northwestern Manitoba, is offered in the hope that it will provide some information toward a better understanding of the distribution of birds in the more remote parts of our provinces. Lynn Lake is approximately 140 miles north of Flin Flon and is about 40 miles east of the Saskatchewan border. The main trees in the area are black spruce, jack pine and white birch. This bird list is comprised of observations made by my brother, Donald Hooper, while working at Lynn Lake, from June until October in 1956 and 1957, and by myself in the short period from January 2 to January 20, 1959. Unfortunately, my brother's records did not include exact dates and other details, hence it may be said for most species merely that they were observed some time in the season of observation. Naturally, some of these would occur as migrants. The list includes 71 species. All records are for 1956 unless otherwise indicated.

Common Loon, Canada Goose, Mallard, Green-winged Teal, Redhead, Lesser Scaup, Common Goldeneye, Bufflehead, Hooded Merganser (one in fall, 1956), Common Merganser, Goshawk, Rough - legged Hawk, Golden Eagle, Bald Eagle, Marsh Hawk, Osprey (1957), Pigeon Hawk, Sparrow Hawk, Spruce Grouse (1956, one on Jan. 7 and Jan. 10, and two on Jan. 16, 1959), Sharp-tailed Grouse, Sandhill Crane, Sora, Killdeer, Common Snipe, Spotted Sandpiper, Solitary Sandpiper, Greater Yellowlegs, Pectoral Sandpiper, Herring Gull, Mourning Dove (one, fall, 1957), Hawk-Owl (one, January 12, 1959), Short-eared Owl, Common Nighthawk (1956, and nest found), Yellow-shafted Flicker, Hairy Woodpecker, Black-backed Three-toed Woodpecker (1956, and one on January 16, 1959), Olive-sided Flycatcher, Horned Lark, Tree Swallow, Gray Jay (1956, and nearly every day from January 8 to January 20, 1959), Common Raven (1956, and nearly every day from January 2 to January 20, 1959), Common Crow, Black-capped Chickadee (1956, also Jan. 12, Jan. 17 and Jan. 20, 1959), Boreal Chickadee (1956, also Jan. 5, Jan. 13 and Jan. 17, 1959), Robin, Hermit Thrush, Veery, Water Pipit, Northern Shrike, Orange-crowned Warbler (1956, nest found), Yellow Warbler (1957, nest found), Myrtle Warbler, House Sparrow, Red-winged Blackbird, Rusty Blackbird, Brewer's Blackbird, Common Grackle, Pine Grosbeak, Common Redpoll (1956, redpolls were heard on Jan. 12 and Jan. 17, 1959), Pine Siskin, Vesper Sparrow, Slate-colored Junco, Tree Sparrow, Chipping Sparrow, White-crowned Sparrow (1956, nest found), White-throated Sparrow, Fox Sparrow, Song Sparrow (1957, nest found), Swamp Sparrow, Lapland Longspur, Snow Bunting.

1962 CHRISTMAS BIRD COUNT

Send in reports, listing the numbers of each species seen on the one BEST DAY between December 19 and January 1. In addition, list other species (number of individuals and date seen) between December 19 and January 1.

Send reports as soon as possible to The Editor, **Blue Jay,** Box 1121, Regina.

INFORMATION WANTED

The Snowy Owl is an annual visitor from the North, being seen in many parts of the province. I am attempting to compile all available records in order to define the winter range of these birds in Saskatchewan. It would be appreciated if anyone sighting Snowy Owls this winter would send their records to me.

B. C. Haysom,
750 Cameron Street,
Regina, Saskatchewan

Lead Plant

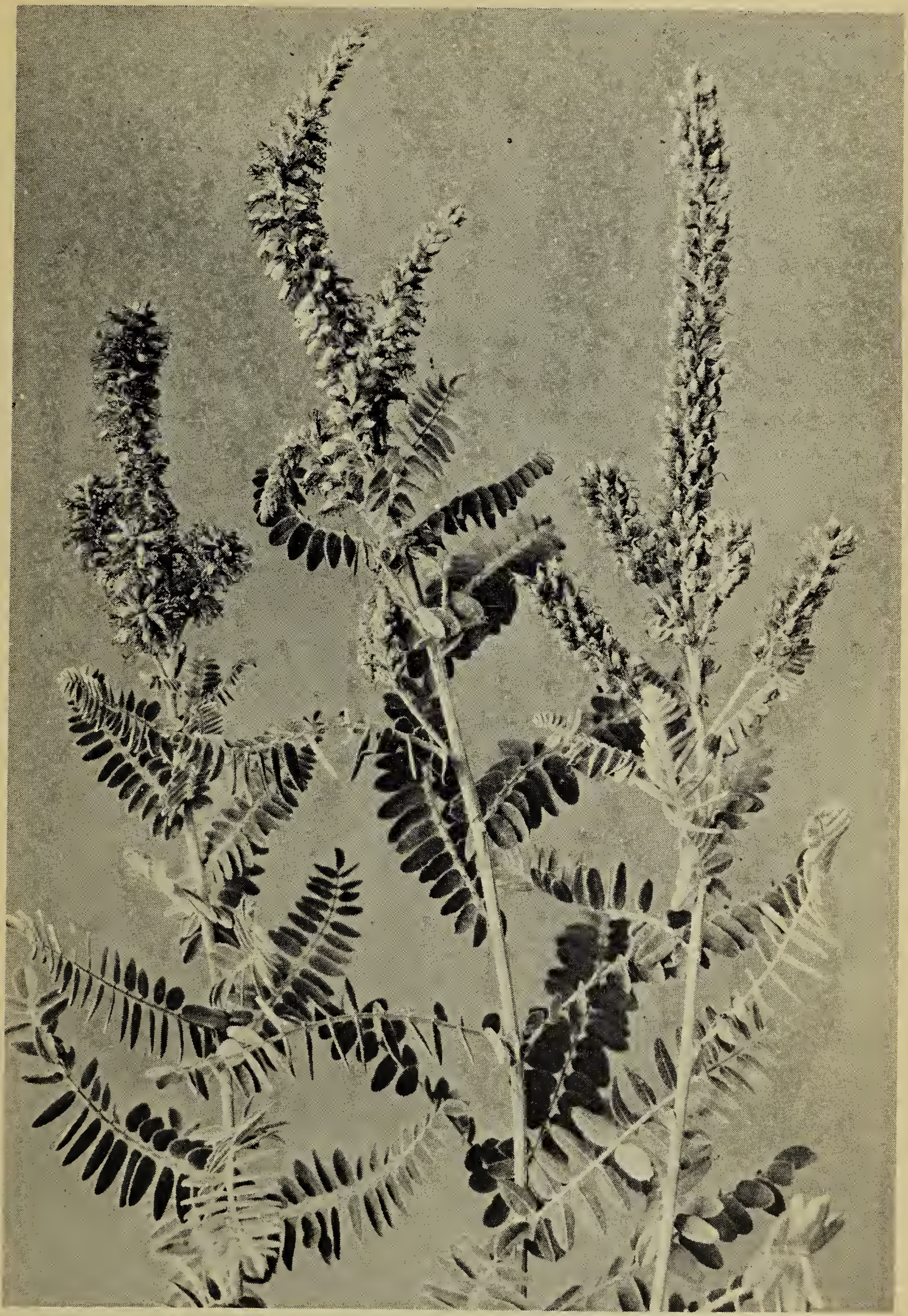


Photo by the late Dr. W. C. McCalla

Amorpha canescens Nutt.

The Greek word "amorphos" means deformed. The Lead Plant is a legume but the flowers are without wings and keel, the standard is small and bluish. This two to three foot shrub only extends west to the southeast corner of Saskatchewan. The above photo was taken in Manitoba.

Tributes to Dr. W. C. McCalla

by **E. H. Moss**, Edmonton

WILLIAM COPELAND McCALLA, who died in his 90th year, August 22, 1962, at Calgary, was born at St. Catherines, Ontario. As a young man he devoted several years to fruit-growing in the Niagara Peninsula. His botanical explorations began as early as 1895. It was in 1899 that he made his first collecting expedition to the west, visiting Banff at that time, and discovering several plant species that have since been named in his honour. In 1913, he moved from Ontario to Alberta and for some years thereafter he operated a farm near Edmonton.

By 1920, Dr. McCalla was widely recognized as an authority on the flora of our region, for in that year his fine book "Wild Flowers of Western Canada" appeared. He was an instructor at the Edmonton Normal School for two years before being transferred to the Calgary Normal School in 1925. He held this position until his retirement in 1938.

Over many years Dr. McCalla studied flora of the Rocky Mountains in the United States as well as in Canada. His excellent herbarium was donated three years ago to the University of Alberta. Dr. McCalla also specialized in photographic work and 25 volumes of his enlarged photographs of flowers and trees have been presented to the National Museum of Canada.

In 1956 Dr. McCalla was awarded an honorary degree of Doctor of Laws by the University of Alberta.

He is survived by his widow, four daughters, three sons, 15 grandchildren and 12 great-grandchildren. Five of his children were graduated from the University of Alberta.

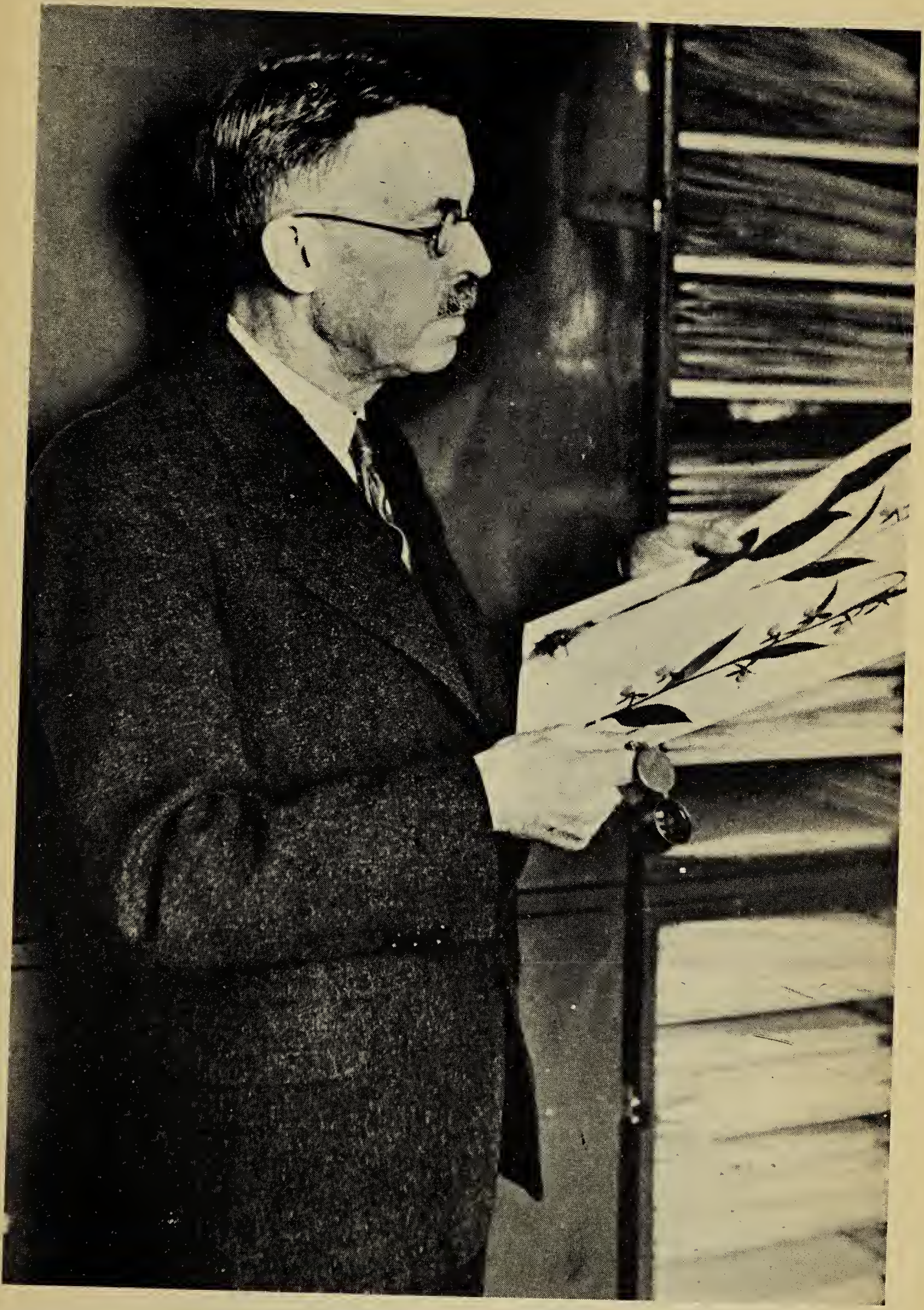
by **Elizabeth Cruickshank**, Regina

All who enjoyed his outstanding flower photographs in the **Blue Jay**, or valued his friendship, will miss Dr. McCalla.

For his work in botany Dr. McCalla won international recognition. Three years ago he donated his extensive herbarium to the University of Alberta and twenty-five volumes of flower and tree photographs to the National Museum, Ottawa. He derived great satisfaction from the knowledge that, though he missed his collections, they were in a safe place where they would be used. Gratifying indeed for him to feel the work of a long life of enthusiastic effort and patient study was appreciated. These gifts, along with his delightful book on prairie wild flowers published in 1920 and the plant pictures which were a regular feature of the **Blue Jay** for a number of years, are tangible monuments to him. They will enrich the experience of botany students who follow him.

But Dr. McCalla's greatest gift, the kind of intangible gift that is eternal, was of a life well lived by a dedicated man of great wisdom, yet so warmly human and humble. His faith, like the tendrils of the wild morning glory he wrote so feelingly about, reached out to inspire and strengthen all those with whom he came in contact.

From those whose lives his friendship enriched, and from **Blue Jay** readers, comes this expression of sincere sympathy to Mrs. McCalla and family in their sad loss of husband and father.



Dr. W. C. McCalla in his herbarium at home, Calgary.

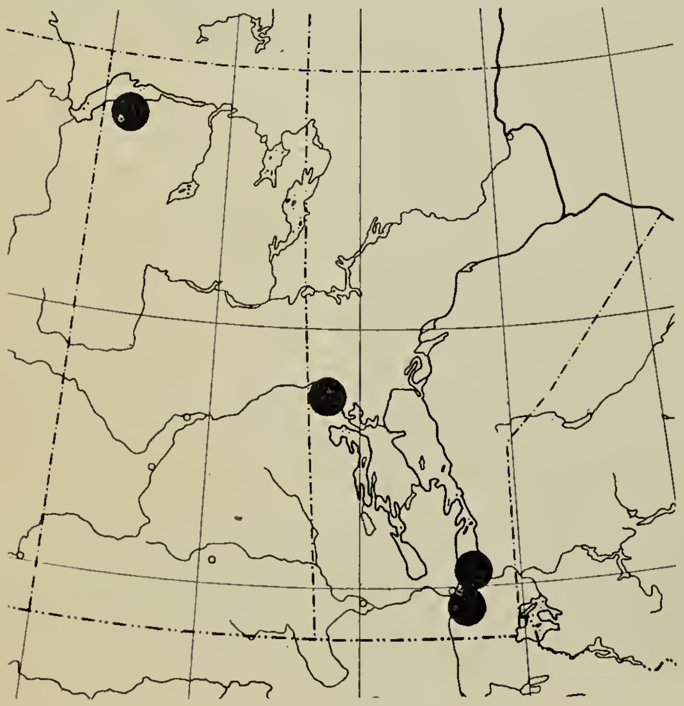
Arethusa Bulbosa, An Addition to The Flora of Saskatchewan

by **George W. Argus**, University of Saskatchewan, Saskatoon

An interesting orchid, *Arethusa bulbosa* L., has recently been discovered in northwestern Saskatchewan. The discovery of this lovely orchid not only adds a new species to the flora of Saskatchewan, but extends the range of an eastern American species about 480 miles and raises some interesting ecological questions.

From June 26 to July 11, 1962, an Institute for Northern Studies expedition was exploring the sand dune region on the south shore of Lake Athabasca, just east of the William River (see Ledingham, **Blue Jay** 20(3):98-102. 1962). It was in a bog along the south edge of these dunes that *Arethusa bulbosa* was found.

Arethusa is a striking orchid standabout 15 to 25 cm. tall and bearing a solitary, showy, rose-purple flower on an apparently leafless scape. A single linear-lanceolate leaf begins to develop shortly after flowering, and becomes well developed during fruit. The plant is loosely rooted in *Sphagnum* and bears a bulbous corn at its base. A quotation from Donovan Correll (1950) is particularly descriptive: "Its beautifully colored flower is held primly erect by the rigid scape, and strangely enough it has the appearance of a fanciful little beast, with ears distended and lolling tongue, straining to recognize the intruder of its peaceful haunts." One of its common names, Dragon's-mouth, reflects this aspect. Other common names applied to this orchid are Swamp-pink, Wild Pink, Bog-rose, and Arethusa, the name of a mythical river nymph.



Distribution of *Arethusa bulbosa* in Saskatchewan and Manitoba. The localities are from Scoggan, 1957.

Its "peaceful haunts" in this case is a wet *Sphagnum* bog along the edge of Little Gull Lake, adjacent to active sand dunes. The bog area is about two miles long and one mile wide and actively being invaded by sand. The bog is very wet and contains a network of shallow inlets which dissect it into a complex of irregular peninsulas and small bog islands. *Arethusa* is locally abundant in this habitat, particularly on the bog islands, and is associated with the following species.

- *Picea mariana* (Black Spruce)
- *Larix laricina* (Larch)
- *Carex pauciflora* **(A new record for Saskatchewan)**
- *C. paupercula* var. *irrigua* (Bog Sedge)
- *Eriophorum vaginatum* ssp. *spissum* (Loose-sheathed Cotton-grass)
- *Scirpus hudsonianus* (Alpine cotton-grass)
- *Sarracenia purpurea* (Pitcher-plant)
- *Drosera anglica* (Oblong-leaved Sundew)
- *D. linearis* (Slender-leaved Sundew)
- *Andromeda polifolia* (Bog Rosemary)
- *Chamaedaphne calyculata* (Leatherleaf)
- *Ledum groenlandicum* (Labrador Tea)
- *Oxycoccus quadripetalus* (Small Cranberry)
- *Sphagnum* spp.

Atlhough numerous bogs were visited during the summer of 1962, further search for *Arethusa* was futile. Even in the general area of Little Gull Lake this species seemed to be restricted to this one bog. In general, this species is rare, but where it does occur it is locally abundant. Such a distribution may be expected at the edge of a species range, but it may also reflect an irregular distribution of a particular bog environment favorable to the establishment and growth of this species. The occurrence in this bog of other species of limited distribution in this general region, including *Drosera linearis*, *Sarracenia purpurea*, and *Carex pauciflora*, also suggest that this bog is unusual in some way. It is unknown why this bog supports certain southern and eastern bog species which are generally uncommon or absent elsewhere in northern Saskatchewan. In the case of *Arethusa* it may be as simple as a smaller rodent population which reduces the amount of predation on *Arethusa* corms. However, it is more likely to be influenced by a complex of climatic, physiographic, biotic, and phytogeographic factors. A detailed study of the distribution of bog species and the bog habitat in Saskatchewan will help to answer this question.

The distribution of *Arethusa bulbosa* is primarily eastern American. It occurs throughout New England southward into the mountains of the Carolinas and westward through the Lake States to Minnesota. In the north it ranges from Newfoundland, Nova Scotia, and New Brunswick westward to Manitoba, and, now, Saskatchewan. Its distribution in Manitoba and Saskatchewan (see map) suggests that it could be expected to occur throughout some of the boreal forest region between The Pas and Lake Athabasca. Exploration of bogs in northern Saskatchewan, particularly in the vicinity of the Hansen Lake Road and the Churchill River Road, may fill a gap in our knowledge of the distribution and ecology of *Arethusa bulbosa*.

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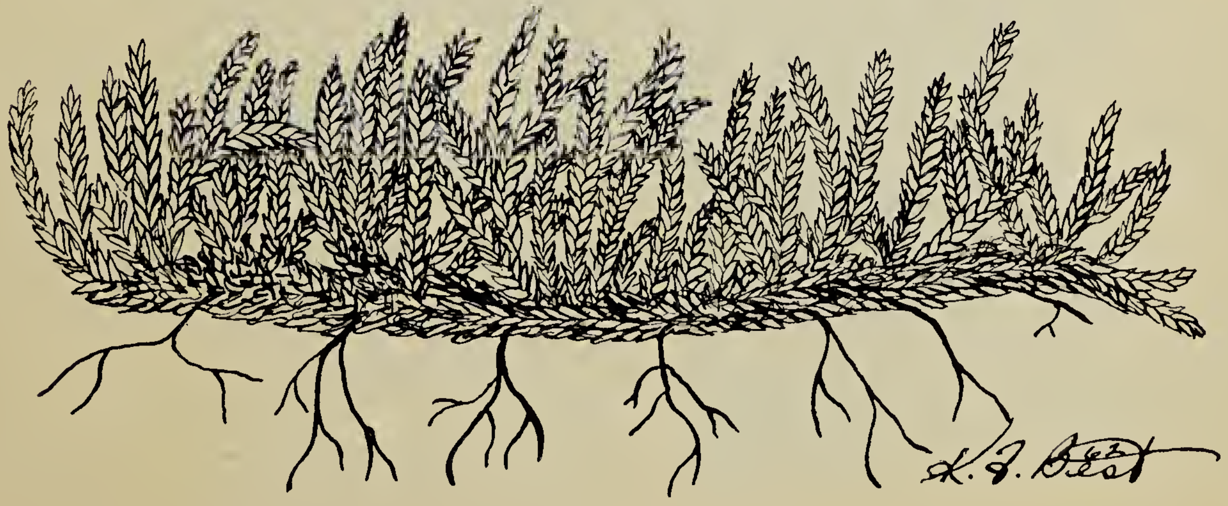
Plants of Eroded Hillsides

by **K. F. Best**, Swift Current

Still dealing with our dry hillsides and eroded areas, perhaps we should take care lest we become like the man who could not see the forest for the trees. On our hills, two plants in particular are found in great profusion, but we often fail to notice them. One is a small moss-like species, the other, a mat-forming phlox.

Although not generally noticed, one of the commonest and most

PRAIRIE
SELAGINELLA



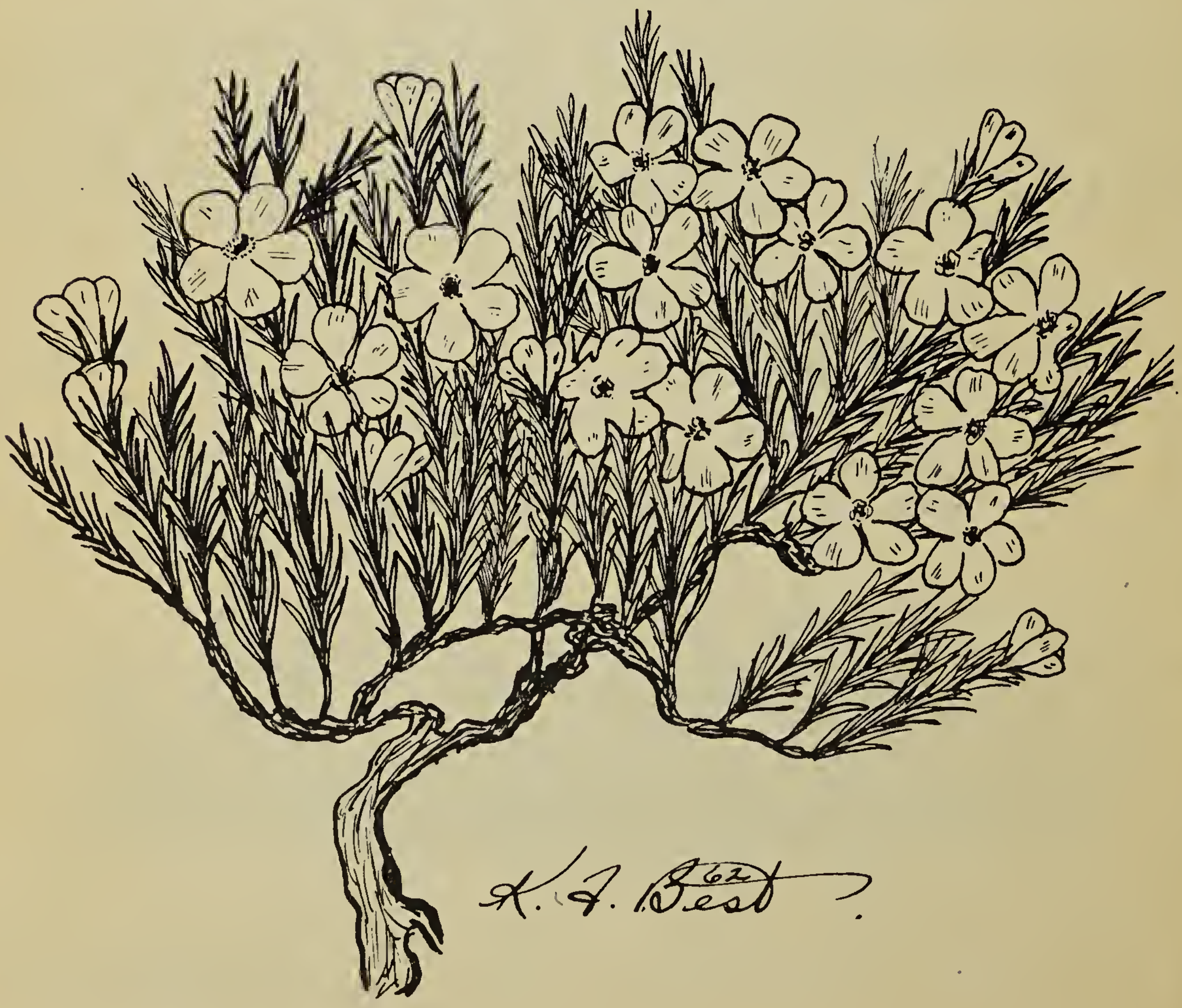
dominant plants of the drier and more open prairie is the Prairie Selaginella (*Selaginella densa*). Belonging to the Spikemoss family, this little Club-moss, as it is sometimes called, forms low dense mats with the stems rooting along most of their entire length. The leaves are tiny, up to ⅛ inch long, each being tipped with a small bristle. The fruiting spikes are ⅜ to 1 inch long and covered with green, shingle-like bracts. The spore containers appear singly in the axils of these bracts. Having no forage value, it increases on native range under conditions of abuse such as from overgrazing. It may serve to arrest soil erosion and perhaps helps build up the soil by adding organic matter.

Moss Phlox (*Phlox hoodii*) belongs to a group of plants almost exclusive to the North American continent. Phlox, meaning flame (referring to showy, brightly colored flowers), was an old Greek name for campion (Lychnis) and was transferred to this genus by Linnaeus.

The majority of western phloxes occur in open situations, on rather dry and often gravelly or rocky soils, frequently in grass types in full sunlight. They are very showy, often growing in masses, and reproducing by seed or by creeping rootstocks.

One of the most conspicuous of our early spring flowers, the Moss Phlox forms large masses of color on the dry plains and hillsides. It is a low, tufted, mat-forming plant with coarse, woody roots. The leaves ⅛ to ⅜ inch long, are sharp pointed, shaped like an awl, and overlap like shingles. The flowers, although generally white, are sometimes pale blue or purple, and are about ⅜ inch across with 5-petal lobes. After flowering, the plants are rather inconspicuous, although they do form a large part of the ground cover often helping to stabilize eroded areas or where the soil is shallow.

MOSS PHLOX



The Case For The Prairie Dog

by **J. David Chandler** and **Ruth Chandler**, Masefield

In the case of the prairie dog there are many for, and few against . . . but the voices raised against him are by far the loudest and most frequently heard.

On October 15th we were fortunate enough to tune into a CBC program which presented the case for various birds and animals which have the hand of man against them. Dr. R. Nero spoke in the cause of the prairie dog. His eloquence was not emotional, he drew a picture both vivid and poetic. We felt again the wild, untouched atmosphere which seems to prevail wherever prairie dogs colonize a town. Heard again the wistful, inquiring bark. Felt again the revulsion which came over us when we saw for ourselves the massacre being indiscriminately carried out.

The ranchers are actually bitter in their denunciation when the matter is brought up. It is true that we who are pulling for this gregarious little prairie nomad have nothing to lose—but it is also possible that poor management of grazing land is a causative factor in the recent increase in number.

It is unlikely that any of us would protest control. In the September issue of the **Blue Jay,** a survey report on the prairie dog by the Department of Natural Resources was printed. Mr. Paynter pointed out that one dog town was in a game preserve and therefore protected. His report, too, was inclined to range public sympathy on the side of the rancher. However, some of us would be poorly pleased to see one colony preserved and the remainder (if possible) wiped out.

We would like to see a proposal raised to protect the rehabilitated prairie dogs of the original dog town. This is settled on land which is naturally arid and sparsely grassed, land belonging to Ed Purask, who was quoted as being quite unperturbed by the presence of prairie dogs. It might be assumed that this dog town is as popular with visiting naturalists as any other. It was here that Dalton Muir spent a week filming the dogs for the National Film Board. Here our "own" naturalist, Ralph Stueck, made his capture of a dozen or more for the requirements of some zoo. Here Ken Campbell filmed and recorded for the Educational Film Board.

The town is settled on an attractive site. The approach is over hilly terrain, suddenly stretching out in a broad flat benching the river. To the west the "Three Sisters" stand forever sentinel. If one has the patience to lie low on some nearby promontory one can watch, with the aid of binoculars, the amusing antics of the dogs in everyday life. At the approach of anything foreign to the colony, numerous little dogs pop up from their circular mounded holes like a finger poked up through the center of a doughnut, busily sounding their quaint, staccato barks of curiosity and defiance. When grazing, one dog may run to another a few feet distant, "kiss" and return to grazing. Or, (as noted by more serious observers) if rebuffed or ignored, the

Prairie Dogs, June, 1962.

one making the advance may raise its tail, spread it, snarl—and then either a kiss is forthcoming, or a chase is on.

Regarding the suggestion that overgrazing encourages the increase of prairie dogs, we would like to quote Ronald E. Smith in his Natural History report of the Prairie Dogs of Kansas, University of Kansas, Museum of Natural History and State Biology Survey.

" . . . Since the study by Taylor, Vorhies and Lister on jackrabbits in 1935, the concept of "animal weeds" set forth by them has been accepted by most ecologists. The concept is that certain animals, like certain plants, increase with the disturbance of the climax and decline as the climax is restored. Data in numerous papers have substantiated the concept but it seems not to be fully understood by many farmers and ranchers, who could make the most use of it.

"Even the farmer-rancher group accepts the fact that rabbits and various range rodents are more numerous on depleted and weedy ranges than on ranges of good vegetative cover, but almost without exception wrongly regards these mammals as the "cause" instead of the "result" of range depletion by overgrazing. Taylor, Vorhies and Lister set up protected plots next to plots heavily grazed by livestock and separated only by a barbed wire stock fence. Grazing pressure from jackrabbits was three times as heavy on the plot grazed by cattle as on the protected plot.

"At the Wichita Mountains, Wildlife Refuge in Oklahoma, Osborn and Allan recorded an instance where a prairie dog colony was protected and cattle removed from the area. In spite of the activities of the prairie dogs, the grass cover increased in density and the prairie dogs abandoned the area because it reverted to vegetation unsuitable as a habitat for them."

Some Lady Lake Shrew Records—On August 26, 1962, I trapped a water shrew (*Sorex palustris*) in a bit of marsh bordering the Lilian River near Lady Lake (six miles north of Preeceville in eastern Saskatchewan). The closest record to my knowledge is at Hudson Bay (**Blue Jay**, 17: 125) about 60 miles north. The expected range of the water shrew is across the forested region of Saskatchewan (and Canada) in suitable habitat, but definite locality records are desirable for this and other species.

This brings the number of shrew species taken in the Lady Lake area to five. I've caught the Arctic shrew (*Sorex arcticus*) (one specimen, August 14, 1961; another, July 25, 1962), a pygmy shrew (*Microsorex hoyi*) (one, June 27, 1962) in the same marsh, and a short-tailed shrew (*Blarina brevicauda*) (one, August 23, 1961) on an island in a nearby lake. The masked shrew (*Sorex cinereus*) is the common species; I've taken a number of specimens.—**Donald J. Buckle**, Lady Lake.

Red fox and possible mountain lion at Shaunavon—The March and June issues of the **Blue Jay** (1962) carried reports of the red fox being seen in the extreme southwestern part of Saskatchewan. I am pleased to note the interest evinced and, for myself, I hope that the fox continues to increase and move southward—which it appears to be doing. I drove out to Jim Stevenson's place, five miles northwest of Shaunavon, after hearing a report of a red fox having been dug out on his farm in May. On the way out a fox crossed the road just ahead of the car, paying scant attention to my approach. According to the boys, the den was about 12 feet long and four feet deep. They found seven pups, which they gave to some interested person; later, however, the young foxes made their escape to freedom. It is believed that there was a second den in the near vicinity.

There were also reports of a mountain lion being sighted seven miles northeast of Shaunavon as it passed within 50 yards of an oil drilling rig. It was very dark, about 1:00 a.m., and when a spotlight was turned on, the animal took off. Further rumors have it that it was later roaming the Pine Creek Park, 18 miles southwest of Shaunavon.—**J. David Chandler**, Masefield.

Please report any mountain lion observations to T. White, 3-1919 Scarth Street, Regina.

Rock Tumblers

by **Watson Crossley**, Grandview, Man.

The question is often asked by those viewing a display of polished rocks, "Where will we find such stones, and how will we know which ones are suitable for polishing?"

Those of us living on the prairies are somewhat limited as to the specimens available, especially in regards to specimens of so-called gem quality. Much of the material that is to be found will come from the glacial drift, and will be a cross section of the various types of rocks over which the glaciers have moved. Gravel beds and stream beds are always likely places to look over. There are usually a few specimens worth picking up, and there is always the chance that something really interesting will be found there.

During the summer, many of us may have had the pleasure of a trip to some lake shore, and probably have been attracted by the bright colors of many of the moist, water-washed pebbles along the shores. Probably you returned home from such a trip with a quantity of these pebbles, selected either by yourself or by the young folks. The next question, what to do with them? They do not look nearly as attractive now that they are dried off, as they did on the wet lake shore. Some may go into the fish bowl, where the colors show up once more, but the majority of them just "accumulate."

Have you ever considered putting them through a rock tumbling machine? More and more people are doing just that, and are finding the resulting polished stones quite attractive and most interesting. True, the majority of these pebbles are of too "soft" a material to take a brilliant polish, nevertheless they are greatly improved.

For the person who is getting interested in the polishing of rocks, the tumbler is probably the least costly and the easiest start. Tumbling equipment can be purchased from the lapidary supply houses, such as Smith's Prairie Book Shop, 2222 Wallace Street, Regina. There are various designs of these machines, many of which are quite simple in construction, so that a person handy around a work shop can easily make his own equipment, that will do a quite satisfactory job of polishing. Briefly, a tumbler is usually a metal drum with tight ends that can be laid upon its side and revolved at from 15 to 25 revolutions per minute.

If possible, a person contemplating having a tumbler made should see one or more in operation before attempting the job. It would also be worth while subscribing to a lapidary publication, of which there are several, or securing a book on the subject. These also are available through the lapidary supply houses. Many valuable suggestions can be gleaned from the pages of such publications.

The tumbling process is not a "do-it-over-night" job. As in all phases of the lapidary hobby, there are a number of procedures and polishing agents which may do an equally good job of polishing. However, I have found that it will take about a month's continuous operation of the tumbler to complete a batch of rocks.

The following procedure may be expected to give fair results, as a start, and may be altered as experience is gained. First week—use a coarse silicone carbide grinding grit, of say 100 coarseness, then wash the stones and barrel thoroughly. For the second week use a finer grit, of 220 coarseness. Again wash the stones and container. It is important that no grit be carried over from one process to the next if a good job is to result. The final two weeks are the polishing period, and here various polishing agents apparently may be used, with somewhat equal results. Personally, I have depended largely upon the detergent "Tide" as the polishing agent, sometimes adding a bit of jeweller's rouge or other polish as an extra.

The stones should be well covered with water in the container, and some filler should be added in the various steps to act as a buffer between the stones and as a carrier of the grinding grit. Two or three pounds of grit for 20 pounds of stone seems to work. If there is available a quantity of small fragments of hard quartzite, etc., it may be a good idea to put a few handfuls of this material in with the grit. It may assist in the grinding process, and you may sometime find a use for these small fragments when polished with the rest.

In constructing a tumbler it is desirable that provision be made whereby the gas generated in the tumbling process can be allowed to escape daily.

Experience will indicate the procedure that suits the individual. Experience will also indicate the types of rocks best suited for polishing. Generally, the harder the material, the better the polish. One soon learns to distinguish the harder types of rock. Among the rocks best adapted to polishing will be found petrified wood, agate and chalcedony and the harder of the fine grained quartzites, such as many of the banded quartzites found in the Cypress Hills and elsewhere.

For the person who has a quantity of rocks that are of little value for cutting with the diamond saw, the tumbler is very useful. Should the tumbling process show up specimens of especial interest, they can still be made other use of. Should there be a surplus of rocks too large for the tumbler, they can be broken up and also run through the machine. If only tumbling a small quantity of pieces, it might be advisable and desirable to rough-shape them prior to tumbling, especially if they are designed for jewellery use, such as lariat ties or other purposes. Cut slices may even be put through the tumbler with fair results, and save much hand polishing.

THE BLUE JAY INDEX

The **Blue Jay Index**, compiled by Mrs. Joyce Deutscher, S.M.N.H., covers the first 18 years of the **Blue Jay**, from 1942 to 1960. Valuable for all who have complete or even partial sets of the **Blue Jay**; for those who want to check what records have been published before consulting sets owned by others; and for all those interested in the history and work of the **Blue Jay.** Price $2.00 plus tax. Available from the **Blue Jay**, Box 1121, Regina, Sask.

Note that special publications #1, 2, 3 are also available at the above address.

THE SASKATOON LAPIDARY AND MINERAL CLUB

Back in March, 1961, a small group of interested people gathered in the Geology Department of the University of Saskatchewan. Under the able guidance of Ernie Hedger a club was organized and named the Saskatoon Lapidary and Mineral Society. Ernie Hedger was elected president.

Since that time the membership has climbed to about fifty. Meetings are held at the University on the third Monday of each month excepting July and August. The Geology Department willingly contributes speakers whenever requested, which adds to the interest and educational value of these meetings.

Situated as we are on 3000 feet of glacial till does not make this exactly a rock hound's paradise, but it is surprising what can be found in the gravel pits. Wood is plentiful, usually as small, water-worn boulders. Jet black flint polishes beautifully and is not hard to find. Occasionally a real prize is picked up in the form of a bit of golden swirl agate, which equals California's finest.

Attendance on field trips continues to mount, and this winter should see more members' obtaining equipment and joining the "cutting fraternity."

Officers for 1962 are: Ernie Hedger, Past President; Dave Harrop, President; Tom Phenix, Vice-President; Ruby Drinkle (Mrs.), our able and hard working Secretary-Treasurer.

David Harrop, Saskatoon.

REMINDER FROM THE BLUE JAY SHOP

1. **Now in Stock** — Mrs. Alice Kehoe's **Hunters of the buried years.** Price, $2.00 plus 10c tax.
2. **Still Available**—1962 Christmas Card (Downy Woodpecker). Price, $1.00 plus 5c tax.

JUNIOR NATURALISTS

Edited by **Joyce Deutscher,** Saskatchewan Museum of Natural History

Young Cedar Waxwings, by William P. Saban

WANTED! More material for this section. We will be forced to discontinue this section unless we get more material sent in to it. Teachers are particularly urged to make writing to the **Blue Jay** a class project. We need your help. Deadline next issue January 15.

NOTE: The name of the boy who sent us this drawing has been mislaid. Please write and identify yourself.

YOUNG CEDAR WAXWINGS

by **William P. Saban**, age 14, Kelvington

Last summer a pair of Cedar Waxwings made a nest in our caraganas near the house and another some distance away. Again this summer I found a waxwing nest containing four young ones. Three of the four seemed in good condition except the one which hatched later and appeared to be sleeping most of the time. In a few days the youngest one had grown as big as the other three.

I came upon this nest August the ninth and I guessed the young were two weeks old. On August twelfth all four had taken flight.

CROWS

by **Rachel Kiniowski**, age 10, Calder

During the early part of September large flocks of crows would settle on our hay meadow and eat grasshoppers.

One evening just before dusk as my brother, sister and I were just coming out of a poplar wooded pasture we heard a sound like that of a violent storm. All at once we saw a cloud of crows rise into the air. They settled down on the trees again a short distance away. There must have been thousands of them as the tops of the trees were just black with them. Two days later we counted twelve different flocks about forty crows in each, flying towards the same place where we had seen them settling for the night. Our father said that last year he saw thousands of crows (estimate) settled for the night on the same bushes. He also said that the noise of their cawing and wing-flapping was so great that he and his companion couldn't hear each other speaking. From this observation it seems that crows have a definite camping place to rest at during migration.

THE HOUSE WRENS AND THEIR ALBINO

by **Bohdam Pylypec**, Yellow Creek

This summer a pair of house wrens constructed a nest in a skull of a dead cow which I hung on a fence post. When I first saw the nest I thought that there were only three brown baby house wrens. Later I found out that there was also an albino. It was about the same size as the others and was all white. They were all big and soon they were ready to leave the nest. When they left the nest an egg of the house wren was left in it.

After I saw the mother scolding her babies to hide. I only saw two brown baby house wrens. The other two were hidden. Later, however, I saw the albino flying above our field.

The Blue Jay Bookshelf

ADVENTURES IN FAMILY CAMPING. By Don and Edith Shedd. 1961. Extension Division, State University of Iowa, Iowa City, Iowa. Price $2.

FAMILY CAMPING (Better Homes and Garden). 1961. Meredith Publishing Co., Des Moines, Iowa. Price $2.95.

Family camping has in recent years taken a great boost throughout the world. Greater desire to use wisely leisure time, greater mobility, improved roads and a great variety of camp equipment and dehydrated foods have all contributed to this increase in family camping. People, furthermore, have always had a great desire to explore new country and see things first-hand.

The two publications listed supplement each other. The Shedds developed their book from an adult education course and a University-sponsored family camping workshop. The text is largely in outline form, but has remarkable coverage and is quite up-to-date. The book is produced by mimeograph and has a few simple line drawings. The lists of references and sources of help are excellent. Families and teachers will find this publication very useful.

The Better Homes and Garden book is a "slick" job and beautifully illustrated with color photographs and drawings. Many of the newer pieces of equipment and short-cuts to making comfortable camps are described.

Either book, or the two in combination, should get any family off to a good start in the art of family camping. Even the experienced family will find much to learn, particularly from the Shedds book. The reviewer gave some assistance to the Shedds when they conducted an adult education course on camping in Des Moines, Iowa, and he knows that the Shedds personally tested much equipment and methods and were great followers and leaders of the art of family camping.

In Saskatchewan with its many provincial, regional and Trans-Canada Highway camp sites and parks, as well as vast Crown lands, forests, rivers and lakes, especially in the northern half of the province, there is much to explore. Each park is different in scenery, topography, plant and animal life. But, the smart "outdoor-inclined" family will do a little homework first (using some of the excellent books now available) and thus have a more comfortable and enjoyable time during an outing. —**Doug Wade**, Regina.

CANADIAN WILDLIFE SERVICE. Research progress report—1961. Dept. of Northern Affairs and Nat. Resources. Ottawa, Queen's Printer, 1962.

From the Queen's Printer, Ottawa, there has recently come a new publication, a progress report on research being done by the Canadian Wildlife Service. The aim of this 48-page report is to "state the objectives of each job that was in progress in 1961, and to tell of the findings and accomplishments to date as simply and as briefly as possible." We are to keep in mind, of course, that completed projects of the C.W.S. are usually reported by more detailed publication elsewhere, and the present bulletin gives a list of publications for 1961 (including articles by J. B. Gollop and G. W. Scotter published in the **Blue Jay**).

Research is not the only function of the C.W.S., but it is the process which establishes the factual basis for effective management of our wildlife resource. Research projects reported on are classified under limnology, mammalogy, ornithology, and pathology, and the accounts of these numerous projects, though brief, indicate the scope of the work of the C.W.S. In the prairie provinces, most of the projects have to do with the distribution and management of waterfowl (e.g. breeding behaviour of mallards, distribution and mortality of geese migrating through Saskatchewan, life history study of the lesser scaup, surveillance of the trumpeter swan population, distribution and evaluation of waterfowl habitat, surveys of wildlife damage to farms).

This short progress report will serve a useful purpose in keeping an interested public informed about research projects that are of vital importance to the conservation of Canadian wildlife. It is to be issued biennially.—**Margaret Belcher**, Regina.

GOALS OF DEMOCRACY: A PROBLEMS APPROACH. By Samuel P. McCutchen, George L. Fersh and Nadine I. Clark. 1962. The Macmillan Co., N.Y. (Brett-Macmillan Ltd., Galt, Ontario). Price $5.35.

One of the major objectives of the Saskatchewan Natural History Society is to seek meaningful management of natural resources. Occasionally publications which are very helpful in coming to an understanding of management of natural resources elude one's attention because they are published as textbooks. **Goals of Democracy** is just such a book and devised primarily for use as a social science textbook on a high school level in the United States. Nevertheless, the entire presentation is so stimulating and the fundamentals discussed so universal, it can be read by Canadians or peoples elsewhere than the U.S.A.

Part 5 (pages 295-386) is directed to answering by way of the "problems approach" such questions or topics as: How Important Are Natural Resources?; The Supply of Natural Resources; The Bases of Wise Resource Use; and The Development of Conservation in America.

Other parts of the textbook are devoted to Effective Thinking; Sharing Political Power; Assuring Rights of Individuals; Meeting Social Needs; Providing Prosperity; Attaining National Stature; and Maintaining Peace. Excellent, up-to-date reading lists are provided throughout.

In general, parents who have children in school might ask themselves when they last carefully examined a textbook. There have been many advances made in the preparation and content of school textbooks—**Goals of Democracy** is no exception.—**Doug Wade**, Regina.

UNUSUAL CAREERS. By Martha Munzer. 1962. Random House of Canada, Toronto. Price $4.

Mrs. Munzer, a retired chemistry teacher, is now an educational staff member of the Conservation Foundation with headquarters in New York City. Each of the careers she describes (solar scientist, meteorologist, oceanographer, geologist, ecologist, sanitary engineer, research chemist, and city and regional planner) has become very important in the management of natural resources.

Each of these careers has made tremendous strides in recent years and is attracting top students throughout the world. Not one of these fields is easy; new ground is broken with extraordinary speed and increasing complexity.

This book has large import for Canada, as it is in the areas described that Canada must progress if it is to hold a position in the world. All high school and university level counselors should have this book for outstanding students. For just sheer enlightenment on what is happening in certain "work" areas of the world, this book is good reading for any student or parents. — **Doug Wade**, Regina.

LETTERS

PRAIRIE DOG

The highlight of a recent trip to Theodore Roosevelt National Park was a drive through several Prairie Dog towns where they were, as the enclosed folder indicates, the "Chamber of Commerce" of the area. I felt at the time how fortunate we were in Saskatchewan to have the only colonies in Canada. Undoubtedly once the Tourist Bureau becomes aware of their value as a tourist attraction the chances of a good access road being built into the area should be unquestioned. Let's hope that in the meantime they are protected in sufficient numbers to provide a healthy population.—**Joyce Deutscher**, Regina.

I am writing this letter to inform you of my opinion regarding the Prairie Dog problem. I certainly would not want to see the Prairie Dog population depleted, as this might well mean the first step to extirpation. Viewing the fact that the land inhabited by the Prairie Dogs is not very productive agriculturally, the Department of Agriculture policy designating this land as wild land and charging no fee is indeed a prudent move. This enables the Prairie Dogs to live in peace. Should their numbers increase to excessive proportions then possibly some form of control would be necessary to safeguard the interests of the cattlemen. Mankind in his bid for progress exterminated several species already, let's not make the list any longer.—**Stanley Zazelenchuk,** Arabella.

I am definitely in favor of preserving the Prairie Dog. You can include me in any motion favoring its preservation. Why not petition the provincial government to set aside a few sections as a refuge for its exclusive use. It is so hard for our animals to live amongst all this civilization.—**Mrs. B. Robinson,** Brandon, Manitoba.

My husband and I have discussed the Prairie Dog and we feel that they should be a government protected species. We have always been under the impression that their colonies were on land which was **not** suitable pasture for cattle—**Mrs. Ivar Svingen,** Mankota.

ROCKHOUNDS

I was interested in the article on rockhounds by Watson Crossley. I find rocks an interesting subject and would like to see an article on rocks included from time to time, ones that concern rocks of our own region or Canada in general.—**Mrs. B. Robinson,** Brandon, Manitoba.

I'm against the "rockhounds" using the **Blue Jay** for two definite reasons. First, the **Blue Jay** is regarded very highly by ornithologists of Canada and U.S.A. as a source of true information of a scientific nature. The use of this magazine by hobbyists would in no way enhance its position. I'm afraid it would be detrimental. Scientific articles on the rocks and minerals of Saskatchewan would be a different matter.

Second, to let the **Blue Jay** become a hobby magazine would encourage COLLECTORS. I use capitals for that word because there are too many such persons who are motivated by avarice or they want the unusual. A person who collects any one type of article and does research on it, or in other words collects with a scientific approach is to be commended and encouraged in every way. But the COLLECTOR, and I know a great many, should be discouraged and my feeling is that if the **Blue Jay** becomes a hobby magazine, the COLLECTOR will be encouraged. Regarding archeological material on display; to display collections of such, those that COLLECTORS have amassed would only encourage COLLECTING.

I may seem hard on COLLECTORS, I am because they are destroying archeological sites daily. They will not keep proper records of their finds even if only picked up on the surface, for surface finds properly recorded do supply definite knowledge to the archeologist whether an amateur or a professional.—**H. K. Cronk,** Saskatoon.

I am a rockhound, a member of the Souris Valley Rock Club which has been functioning since last April. Mr. Crossley introduced us to the **Blue Jay,** which we find very interesting. —**Mrs. R. Gibson,** Estevan.

I believe the new corner for rockhounds is a very good idea. There have been a few very good articles on archeology which we certainly enjoyed but since 1957 when we joined the society most of the articles have been on birds.—**Mrs. I. Svingen,** Mankota.

I enjoy the **Blue Jay** very much —would like to see the odd article on "rock hunting," and more reports from Doug Gilroy, such as he writes in the **Western Producer.** Everyone enjoys his nature series. — **Mrs. J. Atkinson,** Lashburn.

I recognize that many collectors have been guilty of destroying archeological sites but this in most cases has been unintentional. After all many of these sites would never have been discovered but for the so-called collectors. I suggest that the great majority of these collectors are prospective archeologists if given the opportunity and proper contacts. In my opinion the trained archeologist has a wonderful opportunity to get the desired information across to the average collector through the medium of the **Blue Jay** and this information, I am sure, would be well received by them. However before this can be accomplished, more of these collectors or hobbyists must be reading the pages of the magazine and taking part in both the summer meet and the annual meeting.—**Watson Crossley**, Grandview, Manitoba.

BIRDING AT KINLOCH, 1962

This spring's migration was not as good as usual. Considering that my birdwatching is limited to our own backyard and the bluff surrounding our dugout I have had a great deal of enjoyment from it. We had more robins than usual. Four pair nested around the yard. They all must have had good successes for there seemed for a while to be robins everywhere. We had two pair of orioles which gathered nesting material from around the buildings for about three weeks. Then we saw only the male for short periods at a time. They are such beautiful birds and I love to hear their mellow whistle. The yellow warbler, too, came and gathered string for nest material. The warbler took only No. 10 cotton whereas the orioles took anything I put out, even bits of yarn.

The biggest thrill of the season was when I discovered the nest of the sora rail. The nest, at the root of a clump of willows near the dugout, was made from cattails and coarse grass. The five eggs all hatched. They stayed at the dugout till the 25th of August—I spent hours watching them. The young would dash around the water's edge looking for food; as they got older they would swim for short distances, too. I'm hoping they will be back next year. Once you have heard the call of the sora I don't think you will ever forget it.

Our martin house was full. They left here the end of August as usual. As for ducks, we see very few, a few shovelers and this spring for a while two pair of buffleheads. There were no young on the dugout and no nest near by that I know of.

The sandhill cranes are now passing over in large flocks. We have seen several flocks of pelicans, too. Today, September 28, we saw four Canada geese fly over. There are several blue jays around and a week ago a pileated woodpecker was around the buildings for quite a while. The chickadees are here too. Winter will soon be here. In the meantime I'm enjoying the lovely weather and the beautiful autumn colours.—**Mrs. H. Rodenberg**, Kinloch.

PRESERVE RIVERS AND PONDS

The International Association of Limnology, 600 scientists from 33 nations, held its fifteenth meeting in Madison, Wisconsin, in August, 1962, the first meeting of the Association in North America. The association asked the United Nations to support its plan to set aside a number of lakes, rivers, and ponds in the world "to maintain them in their natural state, to preserve them." The purpose of the resolution "is to encourage sensible management, to ban all pollution and runoff of wastes, to keep natural spawning sites of native fish, to enable future generations to see lakes, ponds, and rivers at their best." Areas proposed include ten in the Midwest: in Wisconsin—Lake Mendota, the Brule River, Trout Lake, Lake Mary, Dark Lake; in Michigan —Douglas Lake, Lakes Peter and Paul; in Iowa—Lake Okaboj; in Minnesota—Lake Haska.—**Doug Wade**, Regina.

DONATION

I much regret that I will not be able to make it to the Annual Meeting in Saskatoon this year. It would cost me at least $15.00 for gas so here enclosed is a $15.00 donation to the **Blue Jay**. How about having the Summer Meeting down this way next June. Scenery in the Qu'Appelle Valley here is different and there are dozens of real vantage points. The confluence of the two rivers, the Qu'Appelle and the Assiniboine, at St. Lazare is only about 25 miles away on good roads. I would be glad to look up billeting.— **E. Symons**, Rocanville.

ADVERTISEMENTS

I don't like the idea of running many ads in the **Blue Jay**, though I must comment on the quality of the businesses advertising in it so far. I am getting excellent service from Western Laboratory Supplies and Seven Seas Book Service, the two ads I answered.—**Donald J. Buckle**, Lady Lake.

Reports from the SNHS Annual Meeting

Saskatoon, October 12-13, 1962

by **Margaret Belcher,** Corresponding Secretary

The fourteenth annual meeting of the Saskatchewan Natural History Society was held in Saskatoon on the University of Saskatchewan campus. Registration was at Kirk Hall where an enjoyable informal program was arranged for members Friday evening, October 12, by the Saskatoon Natural History Society. Saturday, October 13, was devoted to business and program sessions.

BUSINESS SESSION

The meeting opened with a report from the President, Dr. R. M. Bremner, expressing appreciation of support received through the year from the SNHS executive and the local Saskatoon society. Dr. Bremner noted the growing attendance at our summer meet and recommended that increasing prominence be given the meeting in June. Minutes of the last annual meeting were taken as read.

Reports of Officers and Committees

NOMINATING COMMITTEE—**Dr. Bremner** presented this report at the beginning of the session so that further thought could be given nominations before the election of officers in the afternoon.

BUSINESS MANAGER — **Frank Roy** reported on the important task of mailing the **Blue Jay** for which his committee is responsible, on arrangements made for the printing of the 1962 Christmas card and the **Blue Jay Index.** Printing for the Index was done by Craft Litho; 300 copies were ordered at a cost of $400 (with 75 additional copies available at $12).

EDITOR—**George F. Ledingham** thanked the executive and reader-members for their expressions of confidence and appreciation. Recognized journals of mammalogy, ornithology and botany use records reported in the **Blue Jay**, and people of professional competence consider the **Blue Jay** a suitable vehicle for the publication of scientific articles; at the same time, a main objective of the **Blue Jay** has always been to provide a medium for its own members to publish articles and observations. A rise in cost of $70 on the last issue was reported.

NEWSLETTER COMMITTEE — **Doug Wade** reported for the special committee set up by the executive to consider the feasibility of publishing a newsletter. To send out 1200-1400 copies of a mimeographed single sheet letter would cost around $70; Wade recommended we issue a few trial newsletters. Upon Dr. Ledingham's recommendation, it was decided to issue two newsletters before the summer meeting, at which time the committee would present an evaluation of the project.

TREASURER—In the absence of **Mrs. Grace Steele,** copies of the treasurer's report were circulated. As retiring treasurer, Mrs. Steele is to be thanked for the willingness with which, amid her pressing duties and responsibilities, she gave of her time and services to the Society. A vote of thanks was moved to Manley Callin for auditing the Society's books and a contribution of $25 was made towards his expenses.

BLUE JAY SHOP—**Mrs. Elizabeth Cruickshank's** report was read by the corresponding secretary. George Dodd and Connie Pratt have again acted on Mrs. Cruickshank's committee and assisted in the shop. Net income from the Shop, as shown by the treasurer's statement, was $558.75. Many difficulties, however, face the hard-working committee in arranging for sales during their absence from the shop, in spite of the generous assistance of Museum staff. It was moved that a special committee be named to help the present committee explore the possibility of other arrangements.

PUBLICATIONS COMMITTEE—**G. F. Ledingham** reported for the committee. The **Blue Jay Index**, just off the press, was on sale at the meeting ($2.00). Future publications: R. W. Nero's **Birds of Athabasca** and E. M. Callin's **Birds of the Qu'-Appelle.**

PRAIRIE NEST RECORDS—A written report was received from **Elmer Fox,** indicating that a number of 1962 cards had already come in, and that the annual summary would be presented in the March **Blue Jay.**

RESEARCH GRANTS—**Elmer Fox** wrote to report that $372.78 was still available in the research grants fund. One application was received in 1962—from B. de Vries, whose 1961 grant was renewed this year. Mr. Fox recommended that the fund be given greater publicity in the **Blue Jay.**

EXTENSION—**Ross Lein** reported on the formation of this new committee which has in part superseded the Publicity Committee (now discontinued). Aim—to increase **Blue Jay** membership in neighboring provinces, the Northwest Territories, and adjacent states.

Reports of Local Societies

REGINA—The 1961-1962 program included eight evening programs, summer field trips to the Strawberry Lakes and Touchwood Hills, annual September picnic at the sanctuary, Christmas count and second annual spring bird census, as well as weekly Saturday afternoon spring bird trips. The Society also sponsored five Audubon Screen tours, catered to the SNHS June meeting at Fort Qu'Appelle, and made a grant of $250 to R. W. Nero to support a trip into northeastern Saskatchewan—**Frank Brazier,** for the president.

MOOSE JAW—Nine regular meetings and eight field trips, including the final pot-luck supper, were held. Members also participated in Christmas count and spring migration study, and are keeping records for a local list. Special project—Birds of Prey poster contest.—**Mrs. Leitha Knight,** Secretary.

SASKATOON—In addition to regular monthly meetings, the Society had a series of spring hikes for members interested in birds and plants, and a September picnic. Special projects—building up a flower slide collection to be available to groups of scouts, etc.; placing 35 Mountain Bluebird nest boxes; Christmas and May 24 counts; keeping bird records for Saskatoon for B. Gollop's bird list committee. About 40 members of the Society were involved in preparations for the SNHS 1962 annual meeting.—**Frank Roy,** President.

SASKATCHEWAN FALCONRY ASSOCIATION—In its first report to the SNHS, the Association's aims were described and its program outlined—nest finding (Falcons, Golden Eagle), banding (Snowy Owl). A brief was submitted to the Department of Natural Resources re: the taking out of the province without permit of birds of prey designed for the American market.—**B. Haysom,** President.

RESOLUTIONS

1. **Whereas** the Saskatchewan Natural History Society was founded 14 years ago for one express purpose of promoting conservation of natural resources and during that period it has diligently pursued that purpose,

and whereas the Centennial Year of 1967 will require some lasting and significant memorials,

now therefore be it resolved that the Government of the Province of Saskatchewan be petitioned to undertake a bold, imaginative program to this end, involving:

(a) the establishment of a grassland park in the southwestern part of Saskatchewan which would include several Prairie Dog towns;

(b) the establishment in conjunction with the Hanson Lake Road, of at least one lake and one river section as inviolate wilderness areas, Wildnest Lake being suggested for the former, and Sturgeon-Weir River from the Hanson Lake Road bridge to Sturgeon Landing for the latter; and

(c) the maintenance of the historic Churchill canoe route in as pristine condition as possible through protective zoning regulations.

2. The Saskatchewan Natural History Society petitions the Saskatchewan Department of Natural Resources to undertake at the earliest possible time an inventory of natural areas in the southern part of the province of Saskatchewan. The Society is interested in this inventory and is willing to send a delegation of its members to meet with the Honour-

able Minister of Natural Resources and his representatives to discuss this suggestion and to ascertain wherein the Society can be of help in expediting the inventory.

3. The Saskatchewan Natural History Society commends the Wascana Centre Authority for its far-reaching plans for the development of the entire Wascana Centre area, and for its foresight in retaining the Regina Waterfowl Park as an integral part of the centre. The society supports the three objectives which guide the Regina Waterfowl Park Committee in seeking the preservation of the marsh, islands, and adjacent land area:

(a) The establishment and increase of birds and other wildlife population;

(b) The retention and development of the Waterfowl Park in as natural a marsh condition as possible with the associated native flora; and

(c) The encouragement of the use of the Waterfowl Park by public, organized groups and the University for research, educational and special recreational purposes.

PROGRAM

1. Lecture by Dr. K. J. McCallum, Head, Dept. of Chemistry, University of Sask., "Carbon Dating, How and Why." The importance of carbon-14 measurements, which can be applied to material of 40,000 years or less of age, was outlined with a lucid explanation of the principles and procedures involved in making these measurements. Until last year the University lab was the only lab using this carbon-dating method, and samples came here from all over Canada and elsewhere. Examples of archaeological and geological studies which have made use of carbon-dating were cited.

2. Illustrated talk by Dr. George Ledingham, "Travels in the Southwestern Desert". Through a series of fine kodachromes, Dr. Ledingham told the story of his trip with Jack Livingston, Jim Bailey and Bill Smith, in search of new bird species in the southwestern states. These pictures supplemented the report given in the last **Blue Jay.** At the end of his talk, Dr. Ledingham introduced a note of contrast by showing a few shots from a later trip to the shore of Lake Athabasca where he camped on Little Gull Lake with Dr. Argus and Dr. Nero.

3. Members' kodachromes—presented by J. Slimmon, D. Wade, F. Roy, R. Shemko, J. Pepper, Pern Cordery, Gertrude Callin, G. Hardy, W. Yanchinski, J. Hogg—proved, as always, a popular feature of the program.

4. Smorgasbord dinner at Kirk Hall, with presentation of awards.

5. Evening Lecture — Biology Theatre. The Society was unusually fortunate this year in having as its guest speaker Dr. William E. Swinton, Head of the Life Sciences Division of the Royal Ontario Museum.

THE CHANGING FACE OF SCIENCE

Digest of Dr. Swinton's address to the SNHS, October 13, 1962.

The theme of the changing world and the changing face of science can be introduced by recalling the world of the dinosaurs, spanning 100,000,000 years from the time of their appearance to their extinction. The dinosaurs seemed admirably adapted to their environment. Why, then, did they disappear? And what of man?

Whether we like it or not, we live today in a world of science. Our society is a "scientific paradise" in which we take for granted the results of innumerable scientific discoveries. But we live also in a world of want and hunger. This being so, can it be a stable world?

Looking back into the past, we see that most of the changes in society came about through recognition of the inadequacy of human attributes. The imperfections of man's hands and feet gave rise to tools and means of transportation. Man is a "tool-making animal."

The great modern advance in science began only 300 years ago, with the greatest of all inventions, the microscope. From that moment the whole history of the world was transformed. The first little Dutch microscope revealed the cell, and so introduced a new conception of all living things as built up of cells. Since then the electron microscope has made the study of viruses possible and for the first time it is obvious that there is no barrier between the living and the non-living.

Now it has been shown that cells contain chromosomes and that the genes in the chromosomes are made up of chemical substances, DNA and RNA. These particles can be made in the laboratory and scientists will soon be making living substances and controlling the direction of evolution.

Three hundred years ago, too, Galileo made his own telescope, and it was learned that the earth was not the centre of the stage. Today we think of the Milky Way as an enormous cart wheel in the sky, and on this is a speck of dust, our solar system—a concept resulting from observations with the radio telescope which registers systems that are 50 billion billion light years away—worlds unspeakable in size and remoteness.

The world is not as simple as it used to be! Science has extended the life span, reduced the loss of life, prepared a population explosion. Soon space will be a greater problem than food, and the opening up of new living space is already being considered—in the Arctic, in the deserts, on the moon.

One of the latest accomplishments of modern science is the electronic brain, and today electronic brains are assessing what is happening in the sky or guarding the safety of nations. We live in a world in which science can be our servant or destroy all, for science is like an automobile, an instrument of good or harm as determined by the man behind the wheel.

What can be done? We must insist that there be far more general communication about science, about its double-edged character; we must be determined that science will be used only for the good of humanity; progress or evolution must be **directed**, although we do not yet know who will direct it and can only believe that the answer will come from people and organizations of good will. All responsible people must be worried, but it is not too late to shape our evolution through a sense of responsibility in individuals, communities and governments.

ACKNOWLEDGMENTS

Arrangements for the 1962 annual meeting were made by Frank Roy, President of the Saskatoon Natural History Society, with the assistance of his executive and a large number of obviously very active members of the society. The planning of the program for the meeting, the booking of accommodation at the University, Friday's informal evening program and reception, registration, the carefully arranged displays, the arrangements for dinner Saturday in Kirk Hall and coffee served after Dr. Swinton's lecture—all these responsibilities were graciously assumed by the Saskatoon local society. Nor should we forget the society's field trip host, Bob Folker, who came out in the half-light of early morning to take a very small but enthusiastic party of birders to look for Blue Jays at Maple Grove.

The SNHS also acknowledges the generous grant made by the Saskatoon society toward bringing Dr. Swinton to the meeting as guest speaker.

The Saskatoon News Agency is to be thanked for the extensive display of natural history books from their stock.

To the University of Saskatchewan at Saskatoon goes an expression of appreciation for the use of lecture halls at a busy time of year.

SASKATCHEWAN NATURAL HISTORY SOCIETY AWARDS

The Conservation Award for 1962 was given to Gertrude Murray, Supervisor of School Broadcasts, Department of Education, with this citation: "Under Miss Murray's leadership, fine teaching aids for Saskatchewan teachers have been developed, covering a wide variety of topics, to enrich and broaden the curriculum. In the range of science, particularly nature science, this teaching aid is of inestimable value. Through these programs initiated by Miss Murray, oral and visual materials help to vitalize the subject. The purpose of the program is to stimulate interest in life out of doors; aware of it, to arouse curiosity about

Sask. Government Photo

Miss G. Murray, Supervisor of School Broadcasts, in her office, April, 1961.

it and observation of it; finally understanding which develops appreciation of wildlife and the interdependence of nature. The part we play in preserving our wildlife heritage is stressed at all times. Miss Murray is to be congratulated on her outstanding achievement in school broadcasts."

The Cliff Shaw Memorial Award was given to Larry Morgotch of Yorkton for his careful study in the March, 1961, issue of the **Blue Jay** of a Great Blue Heron colony. Each year this award, in memory of Cliff Shaw, goes to a member of the SNHS who makes a worthwhile contribution to the **Blue Jay.** The award was made by Dr. G. F. Ledingham, Editor.

American Association for Conservation Information Awards. The Saturday evening dinner provided a happy occasion for announcing, in addition to the Society's own awards, two awards made by the American Association for Conservation Information. This association represents agencies in both Canada and the United States, and Saskatchewan is a member through its Department of Natural Resources. Each year, each province and each state is permitted to honour three people, and two of those honoured in Saskatchewan this year are members of our society. These awards went to Doug Gilroy "for outstanding contributions to conservation education throughout the province of Saskatchewan, and particularly for his weekly column Prairie Wildlife appearing for several years in the **Western Producer"** and to Dr. George F. Ledingham "for quiet but persistent efforts on behalf of conservation throughout the province of Saskatchewan, and especially through his voluntary efforts as editor of the quarterly magazine **The Blue Jay."**

LIST OF PERSONS REGISTERED

T. Bird of FOSEFORD; R. Elmore of HANLEY; C. Ashmore, Mr. and Mrs. K. Skinner, D. Watson of INDIAN HEAD; Mary Brennan of ITUNA; W. Yanchinski of NAICAM; Margaret Belcher, F. Brazier, H. Erickson, Mr. and Mrs. D. Gilroy, Sharon Haggerty, B. Haysom, G. F. Ledingham, Gertrude Murray, R. W. Nero, Mr. and Mrs. D. Wade of REGINA; Mr. and Mrs. J. Barclay, Mrs. E. Bluett, Eleanor Bowey, R. Bremner, J. Broderick, R. Caldwell, Gertrude Callin, Pern Cordery, Mr. and Mrs. H. Dommasch, R. Folker, Marie Gillespie, Eleanor Hanna, G. A. Hardy, Mrs. L. E. Headley, Mr. and Mrs. J. Hogg, Lenore Jantz, E. Kuyt, R. Lein, Mr. and Mrs. J. MacLennan, Mr. and Mrs. Bob Mills, Marie Pember, Dr. and Mrs. J. Pepper, Bob, Phyllis, Ronnie and Gordon; Jean Quick, Mr. and Mrs. W. Richards, F. Roy, Mr. and Mrs. J. Shadick, Stanley and Sylvia, Alvina Schnell, Mr. and Mrs. R. Shemko, J. Slimmon, J. Turnquist, F. S. Wait, Mrs. W. Weatherhead, Mr. and Mrs. J. Wedgwood, Mr. and Mrs. H. W. Wickenden, Jean Winthrope, Mr. and Mrs. Younger of SASKATOON; Mr. and Mrs. S. A. Mann of SKULL CREEK; Mr. and Mrs. Stan Fowke of WAWOTA; Mr. and Mrs. W. Crossley of GRANDVIEW, MANITOBA; and Mrs. W. Morris of ELK RIVER, IDAHO, U.S.A.

Saskatchewan Natural History Society

FINANCIAL STATEMENT — 1962

INCOME		
Memberships (including sales of Blue Jay)	$3,135.45	
Sask. Dept. of Natural Resources (1962 Grant)	500.00	
Advertising	95.00	$3,730.45
Spec. Pub. #1 — Guide to Sask. Mammals	86.38	
Spec. Pub. #2 — Birds of the Sask River	142.80	
Spec. Pub. #3 — Birds of Regina	356.00	
Blue Jay Book Shop (Net income year ending Sept. 30/62)	558.75	
Annual Meeting, 1961 (net)	43.26	
Summer Meeting, 1962 (net)	95.00	
Donations	30.00	
Interest (bank accounts and bonds)	59.88	1,372.07
		$5,102.52
EXPENSE		
Printing of Blue Jay (4 issues)	$3,427.90	
Honoraria	400.00	
Typing of subscription labels	115.11	
Postage	63.37	
Office supplies	23.94	
Subscription renewal inserts	209.90	
Bank exchange and charges	16.98	
Miscellaneous	20.43	$4,277.63
EXCESS OF INCOME OVER EXPENSE		$ 824.89

STATEMENT OF ASSETS AND LIABILITIES AS OF SEPT. 30, 1962

ASSETS		
Cash in bank (current)		$ 847.28
Cash in bank (savings)		1,779.04
Government of Canada bonds		300.00
Receivable from Blue Jay Book Shop	1,735.76	
Plus net income for year ending Sept. 30/62	558.75	2,294.51
Receivable from Dept of Natural Resources (1962 Grant)		500.00
		$5,720.83
LIABILITIES		
Accounts Payable (Midwest Litho)	909.30	
Trust Fund (re Special Refuge)	439.40	1,348.70
NET WORTH		
Balance as at Sept. 30, 1961	3,547.24	
Increase for year ending Sept. 30, 1962	824.89	4,372.13
		$5,720.83

THE SASKATCHEWAN NATURAL HISTORY SOCIETY

OFFICERS (October, 1962, to October, 1963)

Honorary President	President J. W. T. Spinks, University of Saskatchewan, Saskatoon.
Past President	Ronald M. Bremner, 404 Medical Arts, Saskatoon.
President	Steve A. Mann, Skull Creek.
First Vice-President	Doug Wade, 1351 Jubilee Avenue, Regina.
Second Vice-President	A. O. Aschim, Prince Albert.
Treasurer	Frank Brazier, 2657 Cameron Street, Regina.
Circulation Manager	Frank Roy, 120 Maple Street, Saskatoon.
Editor	George F. Ledingham, 2355 Athol St., Regina.
Corresponding Secretary	Margaret Belcher, University of Sask., Regina Campus.
Recording Secretary	Thelma Pepper, 1015 Temperance Street, Saskatoon.

DIRECTORS

Three-year directors: Dave Santy, Beechy; Robert Mills, Saskatoon; Jack Lane, Brandon; Robert Folker, Saskatoon; David Chandler, Masefield.

Two-year directors: Laurence Beckie, Bladworth; Manley Callin, Fort San; Doug Gilroy, R.R. 2, Regina; John Hudson, Saskatoon; Ross Lein, Estevan.

One-year directors: Harvey Beck, Saskatoon; Mrs. Keith Paton, Oxbow; Bill Richards, Saskatoon; Spencer Sealey, Battleford; Mrs. F. B. Taylor, Moose Jaw.

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Ron Lloyd, Meath Park; Frank Hill, Moose Jaw; A. O. Aschim, Prince Albert; Tom Gentles, Regina; Frank Roy, Saskatoon.

CHAIRMEN OF COMMITTEES

Bookshop: Mrs. Elizabeth Cruickshank, 2329 Athol St., Regina; Conservation: R. D. Symons, 2324 Scarth St., Regina; Greeting Cards: Mrs. Dot Wade, 1351 Jubilee Ave., Regina; Membership: Frank Brazier, 2657 Cameron St., Regina; Newsletter: Doug Wade, 1351 Jubilee Ave., Regina; Prairie Nest Records Scheme: Elmer Fox, 3455 Rae St., Regina; Research Awards: Elmer Fox.

BLUE JAY MAGAZINE

Editor-in-chief: George F. Ledingham; Assistant Editors: Robert W. Nero, Margaret Belcher, Joyce Deutscher.

NOTICE TO MEMBERS

This is a second appeal to members to renew their own memberships and to enroll friends as members. At the same time, we would like all paid-up members who have not received all their past **Blue Jays** or know of others who have missed copies, to write at once to the Treasurer, Blue Jay, Box 1121, Regina. This will help the new treasurer set up his files.

Christmas gift memberships will be announced by a card. Each new member joining now receives the December, 1962, issue as well as four issues for 1963.

MEMBERSHIPS

All persons interested in any aspect of nature are invited to join the Saskatchewan Natural History Society. Membership due per calendar year re: Regular, $2.00; Junior (including schools), $1.00. The **Blue Jay** is sent vithout charge to all members not in arrears for dues. Send your membership o Frank Brazier, Treasurer, Blue Jay, Box 1121, Regina.

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